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THE UNIVERSITY OF ALBERTA

FORM AND CONTENT IN EDUCATIONAL UNDERSTANDING

BY

DAVID ALEXANDER KEAST

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH

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IN

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DEPARTMENT OF EDUCATIONAL FOUNDATIONS

EDMONTON, ALBERTA

FALL, 1988

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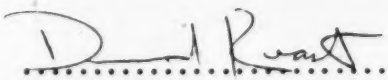

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ABSTRACT

The basic premise upon which this investigation proceeds is that the development of understanding in learners is not adequately accounted for simply by the instilling of content or subject-matter. When close attention is paid to approaches taken by educational theorists and practitioners one is likely to find a 'content-oriented' philosophy of education. One is likely to find, that is, a preoccupation with the transmission of information rather than the genuine development of understanding, or worse yet, cases where one is equated with the other. It will be the contention of this thesis that the former activity is quite distinct from the latter and it shall also be argued that true development of understanding, once we more clearly define it in terms of the 'form' of understanding, is, ultimately, more educationally valuable, and thus should rightly be regarded as a primary aim in education.

When philosophical inquiry is brought to bear on such issues it will necessitate the asking of more fundamental questions, which, when placed within an educational framework, become questions concerned with the meaningful organization and interpretation of experience. This, in turn, necessitates investigation of the nature of conceptual schemes and concepts themselves. It will also necessitate inquiry into the status of 'a priori' knowledge within our entire system of knowledge and understanding.

Within the philosophy of education, inquiries concerning understanding

ought to be kept within a framework of relevance for educational practice. Thus, the nature of understanding will be discussed within the context of aims of education, and how this is logically related to the concept of education. Finally, certain fundamental criticisms will be made, mainly in relation to the theory of P.H. Hirst, which shed light on why it is that an account of the development of understanding entirely in terms of the acquisition of "bodies" of knowledge is inadequate, and in fact logically implausible. Needless to say, this will have important ramifications, some of which will be discussed, for curriculum, teaching, and learning.

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INTRODUCTION

I had originally been interested in certain philosophical questions in moral education. In short, I was looking for some rational and objective ground for moral decision-making, the kind of ground which would provide meaning and relevance for the notion of 'autonomous' moral judgment. It became immediately apparent from the epistemological aspects of this issue that similar sorts of problems existed in theories of knowledge. These problems would have immensely important implications for education, since adequate grounds for knowledge are assumed at the very foundation of education, and indeed, are most often taken for granted in the practice of education. I therefore began to be interested in rational and objective grounds for claims to knowledge generally, both empirical and 'a priori'. I do not mean to suggest that such problems are identical to moral problems, for indeed, they are not. Simply put, one of the issues with which I initially became interested might be stated in these terms: "What is presupposed in saying we have knowledge of 'X'?" To say we have knowledge of 'X' presupposes we have distinguished 'X' from other things. This, in turn, means that we have some sort of concept, notion, or idea of 'X' which is not only distinct from but also systematically related to ideas of other things. How is this possible? This question, when 'translated' into terms directly relevant for education, becomes a question concerned with the nature and development of understanding. All this is of course rather general and vague and requires further

explanation.

First of all, questions about the distinguishing of one thing from others lead necessarily, though not exclusively, into problems in the philosophy of perception. Furthermore, problems related to the growth of understanding will ultimately raise difficult questions concerned with what role language plays in this growth. A properly developed chapter on all such problems is not particularly germane to the main direction taken in the thesis. In lieu of a "full-blown" discussion, and in order to provide some general groundwork for subsequent inquiry, let me make a few brief points about perception and language, culminating in a statement of the position I shall assume in this thesis. (Note that I take 'perception' to have cognitive status. To say that one perceives 'X' means that a discriminatory act of conscious awareness has taken place.)

Whatever else can be said about perception and language, there are a number of quite obvious facts which we derive from reflection on actual experience. For example, we are successful in the use of language in communication with one another and I think this suggests to us something about how, or perhaps better put, why it is that we do use language successfully. When we assert, for example, "Turn left at the next light," "There are brick houses on Elm Street," "John is in the garden," "That is a tiger," certain types of occurrences rather than others are seen to follow. In short, if language is successful, it must be so in relation to some state of affairs in the world. For the purposes of this inquiry, we want to be concerned with what can logically be inferred from this relationship.

It may help to look more closely at a particular example. Take the statement 'It is snowing'. Russell tells us that such a statement can be regarded as either true or false in a particular circumstance without our having direct knowledge of it.[1] What is meant is, we often tend to take the word of another, and if we cannot accept this, we can simply verify its truth or falsity by looking outside to see if it is in fact, snowing. How is this possible? I would suggest that when we take for granted that the statement 'It is snowing' is either true or false we take for granted the actual existence or occurrence of states of affairs by which it can be judged. The statement could only be considered as true without direct verification if "snowing" takes place as an actual occurrence, and such a statement could in fact be true without our direct knowledge of it. According to this point of view, such truth and falsity is dependent upon non-perceptive events, while knowledge, in this case at least, is dependent upon a perceiving knower. This is the sort of reply I would make to the skeptic who insisted rather boldly that the truth of 'It is snowing' is dependent on our looking. If this sort of skepticism were taken to be correct it would render meaningless as knowledge claims a large number of statements of the type 'It snowed here on this day last year', 'A friend of yours died yesterday', or 'It is raining in Toronto'. The type of knowledge claimed or assumed with regard to such statements would have to be abandoned, and with it much, if not most, of the type of knowledge essential to everyday life. In other words, we know that 'It is snowing' is either true or false because we know what it means for it to be actually snowing. Notice that if we were to adopt

the skeptic's position, there could not possibly be any difference in our knowledge regarding such a statement whether we bothered to empirically verify it or not. That is, looking would not make any difference, because the skeptic's position, it seems to me, defies an essential feature of what it is for something to exist, namely, a sense of "independent permanency" in existence. To deny this is as much as to say that objects and occurrences have no existence apart from the knower's apprehension of them. If this were the case there would be no point in attempting to verify the truth of a statement through direct apprehension--nothing would be gained.

I do not mean to imply that skeptical positions are this crude. There are, of course, many other issues that could be addressed. Nevertheless, this description should serve to make the general point and had a detailed argument been developed it may have proceeded roughly along these lines. Suffice it to say that such arguments seem to indicate that not only do physical objects, events, and states of affairs exist independently of a perceptive act, but that there is some epistemically significant similarity between the appearance of an object in perception and the attributes of the object itself. Thus, not only is language used successfully in relation to actual states of affairs, but also, there must be significant relations between states of affairs <u>as perceived</u> and the language used to express those perceptions. If this were not the case, how should we regard empirical statements and their general reliability in action? The discussion which follows will proceed on the assumption that such an argument, if it were developed, would be the most reasonable one to make.

Whatever else is achieved through the philosophy of perception, one crucial question it has not, it seems to me, managed to address adequately is, "What accounts for the organization of what is perceived?" Although we will very soon put aside specific problems in perception, this sort of question is indicative of my general concern. That is, I am concerned with what seems to be fundamental to the organization of experience and the interrelations of knowledge generally. I am concerned from an educational point of view, since it is clearly the case that such problems need to be adequately dealt with in any proper theoretical or practical account of education. What I will suggest as a possible answer to such questions will be referred to as a 'form' of understanding.

Something now needs to be said about my stipulative use of terms. When the term form is used (without quotation marks) I intend its most commonplace or ordinary meaning, as when one might refer to the form of a building or Sonata form. When the term 'form' is used (single quotation marks) I intend a meaning similar to "formal" as opposed to substantive, as when one might refer to a purely formal principle regardless of what aspects of the experienced world it might distinguish at any particular time. I am interested, then, in certain aspects and operations of the understanding ~~in~~ itself. However, it should be noted that I am not attempting to provide anything in the way of an explicit ontological description of a 'form' of understanding. My intent in this thesis is simply to provide some clarity and philosophical foundation for the notion itself, and to show that the notion is tenable and perhaps necessary. Overall, I shall attempt to

indicate the educational importance of taking this notion seriously.

It should also be noted that experience itself is not the key focus. Experience itself, by itself, amounts to very little that is interesting to the philosopher of education. Mere experience is there in plenty without education. What the philosopher of education ought to be interested in, it seems to me, is rather the epistemic interpretation and organization of experience. When one touches a hot stove and experiences the pain produced it is not the experience itself which makes the difference in subsequent action. Indeed, to experience pain and recognize it as such itself presupposes some means by which the experience is distinguished in the way it is. What, then, makes the significant difference? It seems to me it is rather what is done with experience, how experience is interpreted, which makes significant difference in subsequent understanding and action, and this, after all, is what learning amounts to. Learning, then, is more than mere experience and the assimilation of occurrences. For something to become knowledge requires a certain distinction or "lifting out" from the total context. It also requires interpretation and integration with other forms of knowledge. This, it seems to me, is a further answer to the question of why such an inquiry is important for education. Education obviously must be especially concerned with learning, and to the extent that the sorts of questions being asked here shed light on the logical aspects of learning, for example, how, or in what ways it could be regarded as possible, such questions are philosophical in nature and are (or ought to be) of direct concern to philosophers of education and at least of indirect concern to other

educators. In short, the question is, "Can we make sense of learning and the development of understanding without the presupposition of the 'form' of understanding?" And can we properly plan educational learning without clarity over this?

The first chapter in the main body of the thesis deals with conceptual schemes. There are a number of important reasons why this discussion is necessary, and indeed, an appropriate starting point. First, the question could be raised as to whether or not the capacity for the organization of experience is properly represented by the notion of conceptual structures or schemes. This, in turn, raises questions about the clarity of the notion of a conceptual scheme itself. Second, what will be said in the second part of the thesis depends upon this clarity. Third, a good deal of important writing in the philosophy of education depends also upon the idea of conceptual schemes playing an essential role in the development of understanding. The second chapter on 'a priori' knowledge is an attempt to provide a general indication of what represents a likely candidate for being a 'form' of understanding.

In the second part of the thesis I will be interested in the role that the 'form' of understanding plays in the development of knowledge. Thus, I am concerned with the 'form' of understanding in relation to the logical aspects of learning. The first chapter in this part (Chapter III) deals with the concept of 'education' itself, and particularly R.S. Peters' concept of education. This chapter will attempt to clarify logical relations within the concept of education and will bear on the influence of this on practical educational aims.

Chapter IV is a critical examination of the idea of 'understanding' as an aim of central importance in education. It is in this chapter that the reader will find the essential philosophical position on education that it is my intention to develop, although what is stated is in a rather condensed form and must be understood in the light of what has come before as well as with what follows. Chapter V is a further discussion of the logical aspects of learning and an attempt to bring the philosophical position stated closer to the 'experiential' level of 'educating'. The conclusion, in dialogue format, is meant to summarize the philosophical line of thought and to point out certain implications for curriculum development and implementation, which, with sufficient pedagogical research linking theory and practice, could be pursued by those directly affecting the day-to-day character of school education.

With this framework in mind, the problem of conceptual schemes now needs to be addressed, for there is, indeed, a modern philosophical argument against the very notion of such things. The idea, therefore, needs to be examined and clarified, and if it is a reasonable one, it needs to be defended.

PART ONE. THE 'FORM' OF UNDERSTANDING

CHAPTER I

CONCEPTUAL SCHEMES

Davidson on Conceptual Schemes

What is the exact nature and function of conceptual schemes in the organization of experience? It would be correct to say that many, from Plato to Hirst, have drawn far-reaching theoretical and practical implications from set convictions regarding conceptual schemes. What we need to decide is whether or not taking notions of conceptual schemes for granted is in any way reasonable or justified. I have in mind a question, as explicitly raised by Donald Davidson in an essay entitled "On the Very Idea of a Conceptual Scheme," of whether there is even a valid distinction to be made between formal dimensions of understanding and content, or, in Davidson's words, conceptual schemes and content. Indeed, Davidson thinks that there are some very good reasons for doing away with the distinction altogether. This, in turn, would dispose of an assumption that has been held by many philosophers, and place on shaky ground a number of other relations implicitly dependent on this assumption. Contrary to this, I will try to argue that in fact Davidson has, to a certain extent, misinterpreted some important aspects of the problem. Before this is done, however, I think the first order of business, in light of the fact that Davidson's argument is somewhat obscure and complicated, is to get as clear as we can about what it is he is arguing for and how he goes about doing it.

If we wanted to make sense out of the idea of a conceptual scheme, then one way of doing this is to try and make sense out of "conceptual relativism." By this, I refer to the idea that reality (whatever it may be) can be construed according to different conceptual schemes--that there are, in fact, separate and distinguishable conceptual schemes which operate in the identification of aspects of reality. If we could show actual contrasts between our own scheme and others, then we could say it is sensible to talk of schemes, and we would also have some way of identifying and describing them. Davidson makes it clear right from the start that he adheres to a close relation between conceptual schemes and language. In fact, he states, "We may accept the doctrine that associates having a language with having a conceptual scheme."[1] Because languages and conceptual schemes are, according to Davidson, so closely related, it seems that one very reasonable approach for judging differences in conceptual schemes is the translatability of languages.

Davidson considers two kinds of cases that could arise; total and partial failure of translatability. The idea here seems to be that the possibility of conceptual relativism increases with the degree of failure of translatability. If, that is, a language was found to be non-translatable, we could then reasonably assume that the conceptual scheme of speakers was incommensurate with our own. There is, however, a problem with translatability in that it presupposes some common grounding between speaker and translator. We could only point out difference, according to Davidson, on the prior basis of some similar foundation. The consequence is, therefore, that we are not able to

make any sense out of total failure of translatability as an argument for conceptual relativism. What we would have needed in order to prove conceptual relativism is a "criterion of languagehood" independent of translatability, in terms of which a language could be recognized as a language and as being non-translatable. According to Davidson, there just does not seem to be such a criterion. Further, we cannot use truth, by itself, as a criterion of languagehood and attempt to say that the condition for an acceptable language, and therefore for a conceptual scheme, distinguishable from our own, is that it is true but not translatable. Obviously, judging statements true or false presupposes translatability.

The case for partial failure of translatability proceeds by trying to show genuine marked differences or changes in conceptual schemes. But here again, some similar foundation or grounding must be assumed in order to point our difference in the first place, and again, translatability is seen as an unavoidable condition of the identification of conceptual schemes. The problem, according to Davidson, comes down to this: because we cannot properly interpret without knowing something about the speaker's beliefs, and in turn, knowledge of beliefs comes only through translation, some common ground must be assumed as a basis for interpretation. This amounts to taking as given a "general agreement on beliefs" in translation.

Davidson seems to present his conclusion in the following way. First, he provides what is thought to be a "finished" theory of interpretation where truth conditions are assigned to statements in just those cases where statements are "held true" by a speaker. In order for

this to be workable, we must assume "general agreement on beliefs." Second, because of this paradox, there is no solid foundation for the idea of conceptual relativism, and thus no criteria of identity for conceptual schemes. We are not in a position to judge, either on the basis of partial or total failure of translation, that the concepts of others are different from our own. If we cannot say intelligibly that schemes are different, neither can we say they are the same. In short, we cannot get outside of our own conceptual scheme in interpreting any other possible competing scheme, therefore we cannot reasonably say anything about different schemes, or, for that matter, about our own. This seems to be Davidson's general line of thought.

A Reinterpretation

First, I want to suggest that Davidson has replaced conceptual relativism with what appears to be a form of conventionalism. For the sake of discussion, let us call this form "linguistic relativism." It can be expressed simply in the notion that the scope of our understanding is relative to, or limited to, the scope of our language. Note the following statement by Davidson: "Of course truth of sentences remains relative to language, but that is as objective as can be."[2] There is the suggestion of the idea that the meaning and truth of statements is a function of language use. Thus we are locked within these limits; anything we can understand must be contained and expressed within the scope of our system of language.

Second, in order for us to accept Davidson's theory of interpretation, we must also accept a "general agreement on beliefs." That is, interpretation is ultimately dependent upon some foundation or background

of common beliefs. Yet, to accept this we need to know a great deal more about "agreement on beliefs." What is it, exactly, that is believed? Could it be the case, for instance, that one would assume general agreement on various religious beliefs or moral beliefs? This certainly could not be, for this is precisely the kind of thing anthropologists and linguists would be looking for in translating the language of another culture in the first place. Could it then be that Davidson is referring to a commonly held system of ontological beliefs, or perhaps, simply a general cultural or "world" view? An example on Davidson's part could have been helpful here.

What are the implications of such lines of thought for a workable theory of translation? What I want to do now is to provide, in rough form, an alternative hypothesis which will, hopefully, serve to clarify certain ambiguities in Davidson's theory. We are not clear, for example, on the distinction between accepting statements as true and statements being held true. As I will argue, this problem only is a problem because of a further misinterpretation. Once we get clearer about this misinterpretation, our initial ambiguities may disappear.

It seems to me that there is a very 'pragmatic' and undeniable aspect of language--it is the simple fact that, on the whole, language works. The question is, why? I do not mean simply that we tell what we think is true, and it is generally accepted as true. Rather, it is the case that through language we successfully communicate and negotiate our dealings and relationships with a perceptible world. How is such a thing possible? This, of course, requires a more detailed explanation. However, before dealing with these questions directly, it might be wise

for us to first try and clarify the distinction between certain aspects of Davidson's theory of interpretation, that is, between knowing that someone holds a statement to be true, and an attitude of accepting statements as true.

Let us first consider cases of deception. How do we know, it might be asked, when someone holds sentences to be true and when he does not? If we do not know this then how do we know when to assign truth conditions? One problem arising through consideration of deception is that we cannot manage to get clear on the distinction between accepting statements as true and accepting statements as being "held true." The theory of interpretation developed by Davidson can be expressed in the following way: truth conditions are assigned to a speaker's statements when those statements are held true by the speaker. We thus accept as true statements which are held true. But what does this really mean? Could it not be that this is merely a case of accepting statements as being held true? What is the nature of the distinction here? Is it important in theories of translation?

Raising questions of this sort sheds light on a possible reinterpretation. On the face of it, it would seem very odd indeed to suggest that we adopt an attitude of acceptance of statements as true without, beforehand, at least some significant degree of translation. We would not be inclined to judge a statement true or false without knowing something about the meaning (and perhaps context) of the statement. There is, then, an important difference which concerns us between accepting a statement as true, and knowing only that someone holds a statement to be true. Can we then take Davidson to mean, when he says "accepting as true," accepting

statements as true without knowing what they mean? We are inclined to think, although we cannot be certain from Davidson's discussion, that it is in fact this sense that is meant by Davidson when he refers to the attitude of "accepting as true." However, it is precisely this which tends to lead to certain confusions. I want to suggest that accepting sentences as being held true is in fact not a mere belief, or attitude, or some form of charity which is conceded to alien speakers, but is rather a necessary condition for the successful use of language. If we could never be sure whether or not any statement was being held true communication itself would surely break down. If there could be any such condition, something that we could be certain of in the use of any language, surely it must be this. This condition of "truth-telling," it seems to me, is presupposed in <u>all</u> approaches to interpretation, and as such, transcends all theories of translation. In other words, any approach to a problem of translation, even prior to any knowledge of success or failure, presupposes this condition, a condition without which communication itself would be impossible. Notice that when we accept this sense of truth-telling, as necessary for translation and communication, one problem created by the idea of only knowing that speakers hold sentences true and not knowing anything about meaning or belief becomes somewhat diminished. That is, any cases of deception that we can imagine (as the logical type of counter-example) could only be intelligible upon the prior basis of the institution of truth-telling. Therefore, the necessity of <u>acceptance of truth-telling</u> in language use seems quite obvious to me, at least from a pragmatic point of view, and I find it odd that such a thing is regarded as "donated" to a theory

rather than accepted as necessary. It remains for us to decide in what way such a condition "fits" into theories of translation.

However, it might be that something is still missing, that something more is needed in terms of explanation of why language works. If we have a case of knowing only that someone holds a sentence to be true, we would also then know that there must be some good reason or reasons for holding the sentence true. What constitutes good reasons?

When we assert statements such as 'Snow is white', 'There are brick houses on Elm Street', 'The 57 bus goes to West Edmonton Mall', or 'That is a tiger', it seems to me that the meaning and truth of these statements is dependent on some quite specific, non-linguistic states of affairs. If this was not the case, then surely, various kinds of consequences would follow that would be quite different from the consequences that do follow. In other words, the 57 bus would not take us to West Edmonton Mall, or, we would not be inclined to try the 57 bus if we wanted to get there. Neither would we be wary of the imminent danger when confronted with a tiger. As was previously stated, Davidson seems to give us the impression that statements like, say, 'x is red', have meaning and truth only in virtue of our entire system of language. But if the meaning and truth of 'x is red' is reliant upon our use of language only, this, in turn, makes it rather uninformative in relation to the specific context where it is needed for communication. Consider that it would be the case that any other statement whatsoever that we could make about an original statement (in this case, 'x is red'), would be equally uninformative if the meaning and truth of any statement were relative to all other possible statements in the language, which,

incidently, would have to include our original proposition 'x is red'. The problem, simply put, seems to come down to this: in Davidson's system, without reference to actual states of affairs, there are no objective truth-conditions for empirical statements, and it is precisely these statements, among our entire system of language, that should, as empirical, be able to tell us something about the experienced world.

When we look at this issue from the point of view of translation, there is something that is fairly obvious that has been missed by Davidson and which Anthony O'Hear has pointed out.[3] O'Hear suggests that when we attempt to interpret any language we do not first try to discern whether the alien speakers have an abstract system of mathematics, or an elaborate system of science or philosophy, but rather it seems reasonable that we would first observe the manner in which the speakers sorted out their physical environment. In other words, translation starts with correlation in the naming of sense-perceived states of affairs, and it seems that if two languages could be correlated at all it would be first on the basis of this similar identification of a perceived world. This seems to be the only reasonable basis upon which Davidson could suggest "general agreement on beliefs." That is, it is assumed that those who use language successfully are using language to sort and organize their world. Indeed, this seems to be a conclusion that is reasonably made, for if not, there does not seem to be a shared basis for translation.

It is for these reasons that I suggest that what we seem to need is a theory of reference. Something more will be said concerning a theory

of reference in the following chapter. For present purposes, suffice it to say that by a theory of reference I mean a theory which would account for the meaning of general terms (when used in regard to particular objects or circumstances), in part, by virtue of their extension.[4] Such a theory, if developed, would be, at the very least, necessary for successful translation, and most likely an essential feature of the successful use of language in general, at least for the empirical use of language. (I qualify by saying "empirical" because if there are 'a priori' statements, they will, of course, be true independent of verification. This, however, does not address problems of meaning with regard to such statements, since it is assumed here that meaning is, in part, dependent on a theory of reference.) I want to further suggest that when we combine the condition of truth-telling with a reasonable theory of reference we have what amounts to an adequate approach to translation which is free from assumptions about "agreement on beliefs." Furthermore, given these two conditions, if translation failed, we would then have fairly solid grounds for concluding that the conceptual schemes involved were, in fact, incommensurate.

This alternative hypothesis need not be accepted as a theory of translation. It is merely intended to point out certain ambiguities in Davidson's theory. I have so far suggested that, first, Davidson has proposed a theory of interpretation in which the relations between two factors are not at all clear. He has proposed that when statements are held true by a speaker we assign truth conditions to those statements. Second, certain confusions are created by regarding the acceptance of statements as held true as a charity rather than as a necessary condition

for communication. This, combined with a comprehensive theory of reference, leads us to question Davidson's notion of "agreement on beliefs." Thus, it seems to me that certain questions still persist. For example, "Are we satisfied with the distinction between statements being held true and statements being accepted as true?" and "Are we satisfied with a theory of interpretation which assumes the latter on the basis of the former?" If so, how does this illuminate problems of failure of translation? In other words, even if we accept statements as held true by speakers, indeed, even if we accept truth-telling as a necessary condition, we would still need to know to what we were assigning truth conditions. I have suggested that this implies we need a theory of reference, otherwise, it is not clear as to how translation could initially proceed.

Language, Thought, and Concepts

We could raise specific criticisms of this sort concerning Davidson's position but we would not, it seems to me, be addressing certain other important and fundamental questions that need to be addressed. For instance, there is the question of how, precisely, Davidson construes the relation between language and thought. It seems to me there is fairly good evidence, judging from the content of his discussion, that Davidson would construe a very close relation of similarity between thought and language. The following statements give us a clue: "We may accept the doctrine that associates having a language with having a conceptual scheme."[5] and again, "Studying the criteria of translation is therefore a way of focusing on criteria of identity for conceptual schemes."[6] Finally, " . . . : speaking a language is not a trait a man

can lose while retaining the power of thought."[7] These statements tell us at least two important things. First, it can be safely assumed that Davidson believes, and it seems to me that this view is fairly commonly held, that language is the key to understanding thought. If not, we would find it quite odd that he would be so concerned with translation. In other words, he takes very seriously the question, "Can we then say that two people have different conceptual schemes if they speak languages that fail of intertranslatability?"[8] Second, it is the case that Davidson is interested not in just any sort of description of conceptual schemes but rather in a strictly literal one. This can be discerned by his insistence on "criteria of identity" for schemes. For the purposes of this thesis we will want to be concerned about the implications of positions which construe an exact equation between language and thought, for ultimately, I want to go some way towards dispelling points of view of this kind.

Let us then examine that doctrine which draws a close equation between language and thought. The basic assumption seems to be that whatever judgment we make concerning language will likewise apply to thought. When we think, all thought is in words, and when we speak, it amounts to what we think. If we achieve an understanding of the operation of language, we have insight into the workings of thought. Indeed, the assumption seems to be expressed either implicitly or explicitly that language is thought, and thought is language. The point of view must be, then, that no significant distinction can be drawn between thought and language, for if such a distinction could be elucidated, it would be worthy of investigation. However, it is precisely

the possibility of such a distinction that we need to be concerned about.

Other philosophical thinkers have addressed themselves to questions concerning language and thought, and what I want to do now is express in summary form these alternative points of view which, hopefully, will shed new light on the problem of conceptual schemes. For example, Whitehead has something quite clear-minded to say about those who would regard language as thought, and thought as language.[9] If this assumption is correct, says Whitehead, it follows that a sentence represents a thought. Thus the statement "The 57 bus goes to West Edmonton Mall" is the language spoken and also represents a corresponding cognition. Then, another sentence represents another thought. But the problem is, of course, that in the normal course of human expression no two statements are the same; expression is in an important way completely individual and unique in that it amounts to the expression of individual intentions, meanings, perceptions of context, and so on. Whitehead's point seems to be this: How is successful communication possible from sentence to sentence if sentences are thoughts and yet are unique in the sense described? How is communication possible with no similarity whatsoever in the "order of succession" of words and sentences? If the sentence is the thought, and no two sentences are alike, then no two thoughts are alike. An altered expression of what we normally take to be the same thought would no longer amount to that same thought. In addition, such a doctrine, if adhered to, makes the problem of translation infinitely more complex, for we are no longer simply faced with complexity of expression within one language, but this, compounded with communication

across languages. When we achieve a rough equation between a sentence in one language and a sentence in another, our first assumption seems to be that this represents an equation of thought. But since expression is an individual and unique event, the assumption of this strict equation is a fallacy. Such an equation of sentences for sentences amounts to prescribing one possible way of expressing a thought, and certainly it is the case that most philosophers do not hold this sort of rigid and uncreative view of language and thought.

These sorts of criticisms become clearer, I think, when we consider whether or not the notion of 'searching for words' has any valid meaning. What I mean by this is that there seems in actual experience to be a level of thought antecedent to verbal expression where a set of ideas may amount to only a "dim flicker" of explicit understanding. This is the sort of case where coming to a further understanding means, in part, finding the right words to explicitly express what was for conscious awareness only a faintly understood set of ideas. If thoughts were words we would merely be required to gather together the right collection of words. We could indeed simply memorize their correct order of succession. But this story does not represent accurately our <u>experiences</u> of thinking. We do not simply "collect" words and sentences but rather find the <u>right</u> words and construct meaningful statements in order to <u>properly</u> express our ideas.

We could address the problem of equating thought and talk from a slightly different point of view and this is, in effect, what Gilbert Ryle does when he suggests simply that not all thinking is monologue, and further that not all thinking is dependent on the use of words or

symbols.[10] In short, thinking should not be construed as simply talking to oneself. There are, in Ryle's discussion, numerous examples to support this point of view. A motorist, say, in trying to decide on alternative routes, may picture them in his mind's eye. An architect may conceive a building design by working with diagrams on paper, playing with miniature models, or simply looking at buildings. A sculptor may begin the plan of a statue by molding bits and pieces of clay. A painter may conceive a work by imagining juxtapositions of colours and shapes. A musician, when asked how a piece of music goes, may hum the melody or in fact "hear" the piece, and it is not expected that he be able to tell how the piece goes, but rather to show how it goes. Similarly, if and when someone were to try to decide something and did so through the use of words, it might in fact be the case that his deciding took the form of detached and scattered words and phrases. We may very well ask for an exact account of these activities but we surely have no right to expect such an account to be intelligible to us in the same way that fluent explanation might be. Such an account might simply be nothing more than a random and meaningless sequence of utterances. Ryle further points out that it is often the case that one has thought out something without being either willing or able to spell out for us his conclusions. It may simply be that one is not yet up to the task of telling what one has thought. The point here is that deciding what is the case does not amount to telling what one has decided. This poses a particular problem for those who insist on a strict equation between language and thought, for if thought amounted simply to the use of language, this sort of problem could not occur.

A more generous and quite widely accepted definition of thinking is that it is, essentially, the manipulation of symbol systems, where language is seen as only one among many possible types of symbols. But again, Ryle resists this point of view by suggesting that this is not, in fact, our most common use of the term 'symbol'. A symbol, according to Ryle, refers most commonly to that which is a substitute or delegate for something else. As such, its job is to do duty for that something. Therefore, "+" is a symbol for 'added to' and "-" is a symbol for 'subtracted from'. Likewise, "XII" and "12" are symbols for the term 'twelve', which, in turn, is not, according to Ryle, a symbol for something else. It is a separate question, it seems to me, what is the function of words and what they represent. That is, we may not be able to construe 'represent' as being the same as 'doing duty for'. A certain symbol on a map may be a substitute for a word, but in what way is a word a substitute for the thing it denotes? Thus, it seems to follow that images imagined, notes hummed, or clay molded, are also not, according to this use of the term, strictly speaking, symbols. If various colours and shapes were imagined in the conception of an artwork, it would mean, if such things were regarded as symbols, that they be so for something else. What would such images be doing duty for? The artwork has not yet been realized.

Now it is based on considerations such as these that Ryle proposes his general conclusion that the concept of 'thinking' is polymorphous. He seems to mean by this that there are no essential features or conditions common to all cases of thinking. There is nothing which can be characterized as a general answer to the question "What does

thinking consist of?" Similar to a concept such as 'work', which is described by reference to particular cases, thinking is a concept which can include any number of different kinds of occurrences, depending on what sort of thinking is being engaged in. Any succession of occurrences can be present, and terms and phrases such as calculating, pondering, computating, organizing, designing, translating, composing, planning, deliberating, and cases such as clay molded, notes hummed, and colours imagined, all constitute examples and descriptions of what we understand to be thirking. Now, if this conclusion is valid, the proper understanding of it is extremely important for us. If to say that 'thinking' is a polymorphous concept means that there are no essential features by which it can be characterized, then this is as much as to say that no necessary "criteria of identity" are possible for thinking. This may, at first sight, seem to coincide with philosophies such as Davidson's where also, no criteria of identity seem to be evident. But what Ryle implies is fundamentally quite different. What is implied, it seems to me, is that those philosophical approaches attempting literal descriptions of thinking are, in essence, misconceived, for such attempts would amount to attempts to list criteria of identity for thinking where, according to Ryle, no such criteria exist.

The issues as Ryle has developed them augment certain points that have been raised by Iris Murdoch.[11] Both philosophers acknowledge the value of metaphorical description in language use. Ryle proposes that when we look for an answer to the question "What were you thinking?" what is wanted is not a chronological description of various details and occurrences, a description of the succession of mental events, isolated

words, fragments of sentences and so on, but rather what is desired is a history of thinking, or in other words, the plot or story. It is, according to Ryle, the plot in thinking, in terms of intentions, obstacles, tastes, prejudice, reasons, results, conclusions, and so on, that we tend to expect as a description of thinking. However, such descriptions are predominantly graphic or metaphorical in nature. It is, according to both Ryle and Murdoch, metaphor which provides the best means of description for thinking. We find ourselves very often using phrases like "bogged down," "grappling with ideas," "stretching the imagination," and phrases such as "seeing daylight" or "going around in circles" when all the while we sit quietly in a chair. When someone is asked to relate to us his thinking, it is liable to be in these sorts of terms and in terms of content and context in which thought is described. We would tend, in other words, to provide the sort of description which is graphic and informative, while by-passing a mere chronology of mental events. Murdoch stresses the point that such modes of description are naturally accepted with regards to descriptions of many things. We often refer, for example, to "an upset stomach," "a pounding headache" or the fact that "my foot has gone to sleep." Since such expressions are commonly accepted as informative descriptions, one wonders whether there are good reasons why we tend to be skeptical when such forms of description are applied to thinking.

Nor is it the case that we offer each other identical metaphorical descriptions. Murdoch uses the example of describing our experience upon reading certain lines of poetry.[12] It is not likely that all individuals will experience the lines in a similar way, and therefore

less likely that descriptions of the experience will be the same. On the contrary, the nature of metaphor is that it is a unique and novel mode of 'description' of experience. If it were the case that there was, for a given experience, one and only one description, it would not, it seems to me, be regarded as metaphorical. We would be surprised, according to Murdoch, to have pointed out to us the actual extent of metaphoric use in the common course of communication. We think of our emotional empathy and understanding over time concerning a friend, and we describe this as a "bond." The very fact that metaphor is understood as the novel expression or use of ideas and thoughts, one that is non-literal, indirectly implies a distinction between thought and language. If thoughts were words and words were thoughts, what do we mean by "metaphoric" description? Do we think literally that our foot is capable of falling asleep, that our stomach is turned upside down, or that someone has placed glue between ourselves and a friend?

According to Murdoch, and this is another point of importance for us here, the justification for metaphoric use is in its success. It is the case that in human discourse, not only is metaphor a valuable and informative mode of description in the sense that we readily make ourselves understood through its use, but also that we are able, in Murdoch's words, to "influence what others experience" through its use. Metaphor, therefore, facilitates not only communication, but, because of this, also learning. It is a mode of description which can be used to enhance the experience of another.

Thus Murdoch, through elucidating the value of metaphorical description, seems to reject attempts at strict ontological classifications

of thinking as not being desirable and perhaps not even possible. Such methodological approaches are based primarily on a verificationist point of view, one that is in search of some definable "inner stuff," and which will either accept or reject the existence of private modes of thought on the basis of this. In other words, there is a demand for "criteria of identity," for a strict description, based on a verificationist perspective, where, perhaps, no such description is possible. Such a point of view is one, it seems, which commits a methodological error. It is one which assumes that methods of justification for statements concerning some things in the world, apply to all things in the world. It is to assume that all phenomena can be described literally.

So far, what has been said has tended to emphasize relations between thought and language, with the assumption that this will tell us about conceptual schemes. We must remember, however, that these are only some points of view on the matter, and how we regard concepts and thus conceptual schemes, will, to a significant extent, depend upon which point of view we adopt. It may be the case that we have not properly understood these relationships. For example, it could be argued that there exists in many discussions of this type a fundamental confusion as to the nature of a concept itself. It may be argued that, say, Davidson's discussion, and indeed, also the discussions of Murdoch and Ryle, proceed upon the assumption that a conceptual scheme amounts to what is "possessed" by the mind, a sort of cognitive apparatus; the assumption that concepts are fundamentally mental phenomena. Of course, there is a sensible use of the term "conceive" or "conceptualize" which very much implies some form of mental activity. However, we have already

seen from Ryle's discussion that the "gap" between mental activity and identifiable mental entity is a rather wide one. In short, it is possible that the philosophical positions mentioned so far assume too much about the ontology of concepts. It may be that these are cases where 'concept' has been confused with images, impressions, thoughts and ideas. I say this because there are other points of view developed from what seems to be a different notion of 'concept'. I have in mind here the work of P.H. Hirst. We will examine Hirst's work more carefully in a subsequent chapter. However, for the time being, it may be worthwhile to state, in rough form, one to two lines of thought developed by him. Note the following statements: "It is rather that to have a mind basically involves coming to have experience articulated by means of various conceptual schemata."[13] and, "The forms of knowledge are thus the basic articulations whereby the whole of experience has become intelligible to man, . . ."[14] For present purposes, suffice it to say that Hirst regards forms of knowledge as those areas of knowledge marked out by principles and procedures which define the boundaries of disciplines or subject areas. It would, I think, be somewhat incorrect to assume that Hirst simply takes cognitive schemes to <u>be</u> domains of knowledge publicly expressed, but it would not be incorrect to say that the entire intelligibility of conceptual schemes is dependent upon the publicly expressed symbolic systems which characterize these domains of knowledge. What will now be said concerning concepts is derived from this, and therefore, it seems to me, Hirst would generally not be in disagreement.

The first point is simply this: whatever else can be said about the ontology of concepts, they are only intelligible by virtue of the

statements which express them. This means that when any given concept X becomes intelligible it can be expressed in the form "X is A, B, C, D, . . ." To say that X is intelligible means that it can be expressed in language which is publicly agreed upon. We cannot, it seems to me, be informative about concepts without, sooner or later, reference to particular concepts, and this, in turn, must be in the form of "X is . . . such-and-such." If this notion is at all valid, it has serious implications for philosophical positions such as Davidson's. It means, in effect, that there seem to be valid and reasonably precise criteria of identity for concepts. Concepts are, in fact, identified one from another on the basis of the statements which express them. Now, if we accept this as a method of identity for concepts, can we accept it for conceptual schemes? It seems that we should, for conceptual schemes are, after all, merely systems of concepts. It is unlikely that the status of conceptual schemes would be so ontologically dissimilar as to warrant an entirely separate mode of classification. Therefore, there seems no good reason why systems of concepts, in turn, cannot be characterized by systems of statements. Furthermore, this form of identification appears to be adequate for Hirst, since it is the case that the particular conceptual schemes in which he is interested can be distinguished by publicly agreed upon principles and procedures which mark the boundaries of various disciplines.

The second important point follows logically from the first and is, simply, that a concept cannot be purely non-substantive. This is discerned from our previously stated point that the intelligibility of concepts depends upon the propositional expressions of them in language.

To express a concept in the form "X is A, B, C, D, . . ." amounts to saying something about something else (or for that matter, thinking something about something else). The point is, concepts must have content, otherwise how could they be identified as such? Concepts must be about something, otherwise how could they be expressed, and provide meaning in communication?

Now, strictly speaking, I cannot fully endorse any of the points of view being discussed here for the simple reason that we are still not clear on the relations between language, conceptual schemes, and thoughts and ideas, and we are not entirely clear on just what a concept is. It is interesting to note, however, that what can reasonably be said about concepts can only be said on the basis of the public expression of them. From this public expression we are able to discern various characteristics of concepts.

If we were to dissect or "open" the mind, would we find there tiny systems of concepts, mental entities, "floating" about? Such notions are, of course, nonsensical, and I do not mean to suggest that the points of view being criticized here are of this nature. On the other hand, the ontological assumptions upon which such points of view proceed are worrisome in that they seem to imply that we may not be far off from such notions. If the points made here regarding concepts are still doubted, if there are those who take aspects of the ontology of concepts for granted and regard conceptual schemes as purely formal systems of thought whose job it is to organize experience, we need merely to ask, "What concept do you mean?" or "Which concepts are you talking about?" The answer to these questions must be substantive, or there will be no

answer at all.

Summary

Davidson's view of the scheme-content distinction seems to be based upon a notion of schemes taken as cognitive structures or some sort of "array" of mental phenomena by which the perceptible world--the "passing scene"--is organized. But this view is only a plausible starting point when certain aspects of the ontology of concepts are taken for granted. When it is seen that the intelligibility of concepts is dependent upon their public expression, such a point of view becomes suspect. Since, in Davidson's theory, language and scheme are so closely linked, language cannot be properly understood as distinct from purely formal modes of thought, and this, it seems to me, is a distinction which is needed if we are to take the distinction between 'form' and content and the notion of a 'form' of understanding seriously. In other words, Davidson has not asked more general questions about those modes of understanding by which sentences become intelligible, and by which groups of sentences "hold" together as distinct from other groups. From an educational point of view, it is precisely these fundamental questions in which we are interested.

Theories which equate language with fundamental modes of thought want to account for the "passing scene" in terms of language, and therefore provide no account of the intelligibility of language itself. If language is part of our "passing scene," this is as much as to say that our notions of 'content' cannot be exhausted by sense impressions of physical objects, events and states of affairs. Davidson's position is not then, strictly speaking, a theory of communication, because such

a theory would have to find some way of dealing with the logic of communication in terms of modes of understanding which provide for the successful use of language. What we seem to need is a more fundamental notion of 'form'.

We can also see that Davidson's position is one which will be informative only in a limited way for questions in education because, as philosophers of education, we will want to know about the nature of bodies of knowledge, and we will want to know how theories concerning bodies of knowledge are justified. If, say, the large domain of knowledge we know as 'science' is regarded as a conceptual scheme (and indeed it does seem to be so regarded by Hirst) we have no way of knowing how such a scheme can logically hold together as a fairly distinct domain of knowledge. In other words, Davidson's theory does not seem to provide insight into problems concerning the justification of "collections of statements" being distinguished as such.

The points of criticism made in this chapter can be summarized as follows:

1. Ambiguities in Davidson's theory of translation cause us to reinterpret communication from the point of view of the successful use of language. This reinterpretation, in turn, causes us to question the assumption of "agreement on beliefs" as a basis for a theory of interpretation.
2. A valid distinction can be drawn between language and thought through consideration of a number of logical and experiential points. Ultimately, however, we find that thinking is a polymorphous concept, and this means that no necessary conditions can be discovered for the proper use of the term.

3. Therefore, if conceptual schemes are construed as synonymous with mental activity (thinking), then there may indeed be grounds for insisting that no direct ontological classification of conceptual schemes is possible, but there are not sufficient grounds for insisting that no description <u>at all</u> is possible for conceptual schemes.
4. Metaphorical description seems to be a valuable and informative mode of description. It may in fact be the most desirable mode for descriptions of thinking.
5. Ambiguities in how we regard concepts cause us to re-assess the status of conceptual schemes. Depending on how we construe the nature of concepts, there may be precise criteria of identity for conceptual schemes.
6. Whether we are concerned with those philosophies that regard conceptual schemes as part of public language, or with those that do not, none manage to address questions of the type "What distinguishes and organizes content?" It is these sorts of fundamental questions that should be of interest to philosophers of education.

There is a final and related issue that can be raised with regard to scientific discovery and innovation. Given Davidson's "linguistic relativism," in what way could we account for new knowledge? At one time it was thought that the world was flat, and indeed, at that time it was taken as a matter of fact. At that time, true facts about the world (that is, what appears to be true today) were beyond existing conceptual schemes; now they are not. The issue is this. Do positions such as Davidson's deal adequately with whether it is possible for aspects of reality to be as yet unknown? Indeed, questions such as this

do not seem to have much meaning within a framework of linguistic relativism. From this point of view, any new knowledge is then not, properly speaking, based on discovery, experimentation, and observation, but rather appears to be only a new aspect of language. As such, this implies that we tend to verify as true, those statements which seem to "fit" into our system of language. If this is the case, then on what basis can we make reasonable sense out of notions of possible new knowledge? The choice of an ontological system depends, it seems to me, on whether such a choice is logically and reasonably justified. Should the truth or falsity of new sets of statements depend upon how well they "fit" into the existing system of language, or upon perception and observation? I think we are forced to choose the latter, for the former choice is an ontology which contradicts what we know, for example, about the methods of science, and indeed, what we are able to discern from ordinary experience.

CHAPTER II

'A PRIORI' KNOWLEDGE

We have seen from what has been discussed in the last chapter that the notion of cognitive schemes does not provide an adequate account of the organization of experience. It does not provide the kind of account which will clarify what we mean by a 'form' of understanding. In this chapter we will proceed on the basis of the assumption that an analysis of simpler forms of knowledge, that an analysis of the clearest truths which manifest relations between concepts, will yield some insight concerning the nature of the 'form' of understanding. This is the main reason for an inquiry into 'a priori' knowledge. However, it is the case that the idea of 'a priori' knowledge itself has been attacked from various quarters. That is, it has been argued that the necessity of logical truth as such is not a distinction which can be maintained. What will ultimately be said concerning the 'form' of understanding will depend on a clear assessment of arguments for and against 'a priori' knowledge. Thus, the prerequisite task before us is to closely examine and if necessary reinforce the commonly held classifications of 'a priori' knowledge that we now have.

A Definitional Framework

One area within epistemology where definitions play a crucial role, and where at the same time philosophers seem not entirely to agree on definitions, or at least they are not consistent in agreement on the implication of the definitions, is the debate over the analytic-synthetic

distinction and 'a priori' knowledge. The points of view on this issue are disparate. Kant insisted that the statement '7 + 5 = 12' is synthetic 'a priori'.[1] Others have suggested that it is analytic. Still others have suggested that all statements which are not "about the world" and thus cannot be judged by reference to the world (truths of reason) are analytic and 'a priori'; that is, there are no synthetic 'a priori' statements.[2] Quine, on the other hand, has fairly convincingly argued that the analytic-synthetic distinction is one that we should not be making at all.[3] There seems a tendency to associate 'necessity' with analyticity only; there are also different uses of terms such as 'logically true'. First then, I think it would be wise to review and restate the definitions for some of these terms, and in doing this I will be stating what seems to be, according to some philosophers, the definitions most widely used, that is, the definitions which seem to be most firmly grounded in philosophical tradition (not that it is necessarily the case that traditional definitions are strictly adhered to in contemporary writings). We might be able to discern whether or not some understanding can be gained by looking at the relations among the definitions themselves. Second, I would like to point to one or two more specific problems as they are raised by particular philosophers, and which are, when it comes down to it, problems of definitions, problems about what we want to mean when we use the terms.

Therefore, let us begin with a very general definition of what 'a priori' knowledge might be. We say that something is a candidate for 'a priori' knowledge when it can be judged true or false independently

of any examination of some special area of experience. A few things need to be clarified immediately. It must remain clear here that what is being referred to is not something like "innate ideas." What is meant is not that we are somehow born with 'a priori' knowledge fully intact, but rather that it is the kind of knowledge divorced from the contingency of particular experience, and as stated can be judged true or false purely on the basis of the meanings of terms. Thus, '2 + 2 = 4' is 'a priori'. One reason seems to be that on the basis of this statement, or the fundamental principles which it expresses, we can deduce the truth or falsity of any other similar statement; we know that '7 + 5 = 12' is true and that '289 + 171 = 460' is also true. We need no reference in each particular instance to anything but the fundamental operations which constitute the equations--we do not have to refer each equation to states of affairs in order to know that our operations are valid and our answers true. We could likewise deduce from '7 + 5 = 12' that '2 + 2 = 4'. Another reason is the 'necessity' of the knowledge. Now the concept of 'necessity' itself is not quite clear. Necessity has sometimes been equated only with analyticity. In 1934, Ayer seemed to think that certain statements were necessarily true and therefore 'a priori' and analytic. (The onus is therefore upon us to try to show that there could be such things as synthetic 'a priori' statements.) In any case, it seems that '2 + 2 = 4' is necessarily true because if it were not, we should be able to reasonably entertain the possibility that '2 + 2 does not equal 4' could be true, but in fact the logic of the statement does not allow such a possibility. This can be put another way by asking "How should we regard 'a priori' statements that were shown to be false?" A candidate for 'a priori'

knowledge that is shown to be false, is false either because it is not an 'a priori' statement or because its negation is ultimately reducible to simple 'a priori' statements which are true necessarily. This is consistent with the fact that something that is shown to be true independently of particular experiences, a truth of reason itself, must be necessarily true, and cannot be otherwise. It seems then that we have at least two essential features of 'a priori' knowledge; it is true independently of reference to contingent empirical circumstances, and it is necessarily true.

We have already alluded to analytic and synthetic statements. An analytic statement is often defined as one in which the predicate can be "analyzed out" of the subject, or better put, the predicate is already by implication "contained in" the subject. Thus 'All bachelors are unmarried' is analytic because to be a bachelor <u>is</u> to be an unmarried man. The statement could then be further reduced to 'All unmarried men are unmarried'. Quine has had a significant effect upon the contemporary understanding of the analytic problem.[4] From the Quinean point of view, "a statement is thought to be analytic if it is, or can be reduced to, a logical truth by "putting synonyms for synonyms," in this case exchanging 'bachelor' for 'unmarried man'. Therefore it can also be seen that analytic statements are, or can be reduced to, tautologies in the strict sense of being circular definitions.

It seems that the terms "logical" and "logically true" have been subjecced to different usages by philosophers. There can be a general and commonsense usage, where to say that something has been decided or understood logically is simply to say that it has been decided by some

explicit and correct rational procedure. Thus we could say that the conclusion of 'All men are mortal', Socrates is a man', 'Therefore, Socrates is mortal' follows logically. Or, if someone were to infer such-and-such state of affairs on the basis of induction it would seem somewhat incorrect to say that what he was doing was not logical. If, that is, one were to infer from seeing only white swans that it is likely that the statement 'All swans are white' was true, although the statement is false, one's inference would be valid. However, Quine seems to be using the terms in a specialized way and I think we must be careful here as far as his definitions are concerned. He suggested that the statements with which we are concerned are composed of logical particles (for example, no, un-, not, if, and) and non-logical particles (for example, man). A statement is logically true if and only if its logical particles occur essentially, so that a statement remains logically true upon <u>any</u> interpretation of non-logical particles.[5] Thus 'No <u>un</u>married man is <u>mar</u>ried' is logically true by definition, and this would be the case no matter what our interpretation of the non-logical words were. There is, however, according to Quine, another class of analytic statements which are not so clearly logically true. Thus 'No bachelor is married', in order to be reduced to a logically true statement, is dependent upon the notion of "synonymy," which is no less vague than the notion of analyticity itself. So, if we can somehow deal successfully with the notion of synonymy (which I will argue we can) then we could conclude that all analytic statements are, or can be reduced to, logically true statements. If we cannot manage to deal successfully with synonymy then Quine's position holds good. To avoid

confusion, I will, from now on, use the term 'self-evident' in place of 'logical', and I want to suggest that all statements of the type 'No bachelor is married', 'All bald men are bald', 'Anything that is square (equilateral and rectangular) is rectangular', are self-evidently true. They are self-evidently true because they are, or can be reduced to, explicit expressions (or as close as we can get in ordinary language) of, or contradictions of, the laws of logic; that is, they reduce to the logical form 'not (p and not-p)', and 'either p or not-p'. Insofar as all this is true of analytic statements, that the predicate is already assumed in the subject, and that they reduce to tautologies, they are quite clearly examples of 'a priori' knowledge, for anything that is self-evident in the manner described, would require no empirical verification to be determined as such. The statements are true or false entirely in virtue of their meaning and logical form.

Another reason why I want to use the term 'self-evident' to refer to analytic statements is because there appears to be another class of 'a priori' statements which are necessary but perhaps not self-evident, or, not logically true in Quinean terms. I refer of course, to synthetic 'a priori' statements. We will discuss synthetic 'a priori' statements in detail later in the chapter. At this point, suffice it to say that these statements (if there are such things) have been most commonly defined in terms of not being analytic; that is, statements in which the predicate is not obviously analyzable from or contained in the subject. Thus, 'Anything that is entirely red is not blue' is considered synthetic because there seems no possible way in which it can be directly shown that the subject and predicate are analyzable from each other. Another

such possible case might be 'If a = b and b = c, then a = c'. Presumably (although it is not clear from discussions) empirical statements fall within the category of synthetic statements, so that the statement 'All men are mortal' which is regarded as an empirical generalization, could also be called synthetic. But we are not here interested (at least for the moment) in contingent empirical statements, rather, the problem will involve analytic statements and synthetic statements which are 'a priori'.

Reference and Meaning

One line of thought which seems to run implicitly through the arguments of those who share the view that the necessity of logical truth cannot be maintained, is the idea that analytic statements, instead of being "absolutely" true, merely reflect linguistic convention. That is, they tell us something about the way we use language, and thus are necessarily true in virtue of these conventions alone. Connected with this line of thought are two other notions upon which the idea of linguistic convention seems to be dependent. These are the notions of synonymy and the distinction between the theory of meaning and the theory of reference. I shall proceed, then, to examine the "convention" idea as a whole, through a discussion of the meaning/reference distinction and through the notion of synonymy.

Quine has suggested to us that the problem of analyticity confronts us anew "once the theory of meaning is sharply separated from the theory of reference, . . ."[6] What is the exact relation between the intension and extension of words that is being implied here? One point of emphasis is on the idea that the unit of meaning is the sentence and not the word,

or that meanings of words are reliant upon the context of entire sentences. I think in one sense, of course, this is correct. Granted, it is the case that if we were to say something like "In view of our previous discussion, the feeling seems to be that we opt for 'such-and-such' rather than . . .," it would be difficult if not impossible to understand what was being said in a way other than through the meaning of the sentence as a whole. But, this kind of argument can also be misleading because it tends to detract from the role of reference. The question I would like to ask is, "Is the meaning of sentences dependent in any significant way on the meanings of words?" I think that the answer has to be affirmative. It seems to be the case that when we look to simpler sentences for an understanding of how language works, we see that statements such as 'X is red', 'Snow is white', 'There are brick houses on Elm Street', or 'John is in the garden', depend for their meaning, in part, on specific states of affairs. If this was not the case, one would not be able to judge them true or false. I want to make the point that the meaning of sentences is, to some significant extent at least, dependent upon the meaning of words, and, in turn, that the meaning of words is related to their empirical reference or extension.

I had mentioned earlier that the notion of context is often used as a counter-example. Let us then take the example of context and proper names. The proper name 'John', in isolation, tells us little or nothing more than what we already know. Someone might be inclined to reply with something like "'John' is a symbol used to designate individual persons that we wish to so designate," which, of course, amounts to saying "John is a proper name." Now whether or not this amounts to a

rule of language (and I think it is debatable) it does not seem to tell us all we need to know in order to make use of the term. However, in the context of 'John is in the garden' a good deal more is implicit. Not only does the name take on contextual significance, but, more importantly, we also know what action to take in order to verify it. So, it might be argued in this way that the term 'John' acquires its meaning in linguistic context. But notice that context is not just what we most commonly take it to be, that is, the sentence as a whole; context here also implies reference. If it was not the case that 'John' referred to one particular person rather than someone else, and that 'garden' referred to the plot of vegetables at the back of the yard, we would not be able to verify the statement, which means, not simply that we would not be able to judge this statement in this particular case as true or false, but rather that we would not have anything like a theory of verification. This means, in turn, that we would not be able to "put the statement to work"--it would not mean enough to be useful. Furthermore, the same would hold for any statement of a similar kind.

Now what we have said so far applies to empirical statements and thus seems quite obvious in light of the fact that it is the nature of empirical statements that they should be connected with notions of observation and verification. The question is, "Does the same general theory apply to all statements?" In order to try to answer this question we must reconsider the problem of whether analytic statements as such are relative to linguistic convention only. What is important for us here may be pointed out in this way. It seems to me that there is a

very necessary component in language convention that is being overlooked and the key to understanding this is to understand the implications of what we mean by such terms as "linguistic convention" or "rules of language." To say that a statement 'S' is true in virtue of the rules of language is not simply to imply the use of one set of rules over another, but rather it is to suggest that we agree, collectively, on a certain usage and that this agreement is necessary for effective communication regarding the truth of 'S'. This kind of idea must be "built into" the notion of linguistic convention for we do in fact, communicate effectively on this basis. But there is another important notion that follows from this. It would seem most reasonable to assume that whatever set of language rules were in place, these rules would apply for all statements made in the language. What I mean is, it seems very unlikely that we would have one set of rules for, say, empirical statements and another set of rules for analytic statements. If this were not the case, then the following set of circumstances could, hypothetically, arise: we could have some statement, say, 'John is a bachelor', where the term "bachelor" meant one thing, or derived its meaning in one way, and another statement, say, 'No bachelor is married', where the term "bachelor" meant something else, or derived its meaning in another way. This state of affairs seems to me to be quite implausible. The point is, I think, that we make a mistake when we draw the distinction between meaning and reference too strictly. If we can agree that reference plays a role in the meaning of empirical statements, then there does not seem to be any good reason to assume otherwise in the case of analytic statements. In other words, we know that 'No bachelor

is married' is necessarily true at least in part because we know what the term "bachelor" means, and this implies that we know also what specific state of affairs is designated by the term "married." This, of course, is not the same thing as saying that the necessary truth of such a statement is determined by empirical verification. It is not a statement the truth of which is derived by special reference to some aspect of experience, but is rather a necessary truth independent of reference to any particular experience.

What if Language Rules were Different?

The heading of this section could very well have been "What is a language rule?" What was previously said concerning analytic statements and linguistic conventions has assumed that the "naming of things" is in fact a rule of language. There may, however, be reasons for not assuming this, for I want to argue that it is not at all clear what a language rule is.

There is a particular type of example that seems to be used quite frequently in discussions which are intended to "bolster" the doctrine of truth by convention. The example is given of imagining the consequences if it were the case that our language rules were different from what they actually are. It is maintained that if our language rules were different we would have a different set of analytic statements; some statements which are held true would be false. The following might be an example. If the term 'blue' was meant to designate what we understand as the property of 'being heavy', then the statement 'Anything that is red is not blue' would no longer be true 'a priori' because the properties of 'red' and 'heavy' (we would be saying 'blue') are not logically

exclusive. If the term 'bachelor' was meant to designate that which we understand as being a married man, the statement 'No bachelor is married' would be a contradiction. If the term 'square' designated what we understand to be a horse, then the statement 'All squares are rectangles' would be not simply false but perhaps also nonsensical since the subject and predicate would be mutually exclusive.

There are a number of important points worth noting here. If the agreed upon designation of terms is in fact what should be regarded as a language rule, then we have a case where a language rule has "shifted" while analyticity has not. It may appear that our examples have served to reinforce a "conventionalist" doctrine, for it is the case that analytic statements which were once true are now false. It may seem evident, that is, that what is regarded as necessarily true is dependent on convention. But it seems to me that this misses the point. Although analytic statements have changed, our notion of analyticity has not. The distinction might be shown in the following way. When we ask why, in our language with new language rules, the statement 'Anything that is red is not blue (heavy)' is no longer 'a priori', the answer seems to be because it is a statement which does not express 'a priori' knowledge. Likewise, the statement 'No bachelor (married man) is married' is false because it is a statement which expresses something that is a contradiction of analytic knowledge. Conversely, if the word for what we understand to be an unmarried man was, say, 'horse', then the statement 'No horse is married' would be necessarily true.

Nor is it the case that a general theory of reference has been refuted, for it seems to me that a proper theory of reference consists,

at least in part, not merely in the naming of things but rather in the fact that we name things. When we imagine circumstances where the term 'blue' designates the property of 'being heavy', and 'bachelor' designates a 'married man', a theory of reference in some form seems to be presupposed.

The alternative is, of course, that the agreed upon designation of terms is not a language rule at all. Again, this may seem to be consistent with a doctrine of truth by convention since such a doctrine claims to explain the truth and falsity of statements in terms of language rules, and with this alternative it seems that neither analyticity nor language rules have changed. Note, however, that other problems arise. Conventionalists will need to be most concerned about statements which are logically true. So, a conventionalist might then say "The necessity of logical truth is accounted for by rules of language." But this would, in effect, be claiming to explain the truth of what is already necessarily true. In other words, statements and questions concerning the truth and falsity of logical principles presuppose the operation of the principles themselves. No prior explanation seems to be needed. This might be shown in another way by suggesting that if, say, the law of contradiction was false, it would then be true that conventions account for logical truth. It would also be false that conventions account for logical truth.[7]

If conventions account for logical principles, what accounts for convention? We cannot explain language rules by reference to further rules without falling prey to infinite regress. If conventions explain the necessity of logical truths, does this imply that they are arbitrary?

If so, what do we make of the relations between the "arbitrariness" of conventions and the necessity of logical statements? The point seems to be, if something like the designation of terms is not a language rule, then what is? Are we to understand language rules as explicitly stipulated? Or, perhaps they are what is not or cannot be stipulated? If they cannot be stipulated, what do we make of them? This problem expresses best the need to be clear on just what a language rule is. If we are not clear, then much talk concerning "truth by convention" may turn out to be vacuous.

Synonymy

Quine, in "Two Dogmas of Empiricism," has made quite an important case against the notion of synonymy.[8] Briefly, his argument amounts to saying that logically true statements, or those statements that we wish to reduce to logically true statements, depend on definition, so that 'No unmarried man is married' is logically true by definition because 'bachelor' is defined as 'unmarried man'. But definition, in turn, depends upon the notion of synonymy, which is no less in need of clarification than the notion of analyticity itself. Further, when we try to clarify the notion of synonymy for the purposes of understanding analyticity, we end up presupposing analyticity. Quine has, in a sense, asked for a definition of 'definition'. When this is asked, we end up with synonymy, but we are, in the end, not able to define synonymy.

I want to raise two brief points regarding this problem. First, it may be the case that the problem of synonymy need not necessarily be as complicated as Quine makes it out to be. It may be that we should be content with the obvious. If we take a theory of reference seriously,

and if we, for the moment, accept the fact that linguistic convention means "uses of language that we all, collectively, agree upon," then there seems to be no good reason why we cannot "attach" two or more terms to the same objects, things, or states of affairs. Indeed, it seems to be the case that we do just this kind of thing. This may be why we find that the status of 'unmarried man' is also referred to (defined) as bachelor, and why equilateral rectangles can also be called squares. Now I cannot claim that this solves all problems of logical or necessary truth. It does not, for example, account for the problem we find with colours in the statement 'Anything that is red is not blue' (except perhaps to say that it would not make any difference whether or not we had another name for the colour blue). However, it does seem to provide a partial answer to an analogous problem of translation. If we do in fact have the case where more than one term designates a state of affairs in our own language, if, that is, we have two or more terms which are synonymous, there seems to be no good reason why a term in another language should not be synonymous with one of our own. There seems no good reason why terms between languages cannot denote the same states of affairs. We do seem to have significant term to term and statement to statement correlation between languages. This is, in part, what translation means, and is the basis upon which it most likely proceeds. Then, the converse relation should also hold. If synonymy is a meaningful notion between languages, it should also be meaningful within languages.

If this argument is not convincing, let us examine another which comes from the work of Grice and Strawson in their article "In Defense

of a Dogma."[9] I will state in brief form, as clearly as I can, what I understand their criticism of Quine to be. The use of the term 'synonymy' is a way of pointing out that "x means the same as y," or "x does not mean the same as y." Grice and Strawson want to suggest that if we say that the notion of synonymy makes no sense, then this implies that we would be saying essentially the same thing about the notion of 'meaning' itself. That is, if we cannot define synonymy, then we cannot define what it means for terms and sentences to have 'meaning'. But it is the case that it makes good sense to say that we know what terms and sentences mean, that is, it makes sense to ask of a sentence or term, "What does it mean?" If it does make sense to be able to ask this, then we should also be able to compare the meaning of two sentences or terms and thus make a judgment of the type "x means the same as y," or "x does not mean the same as y." The point is, I think, how far are we prepared to go with arguments that are based on criticizing definitions of terms that are essential in the process of definition itself? Such terms may be at a point where language becomes dependent on what is not, and cannot be, explicit. We would, in other words, ultimately be faced with the question "What is the meaning of 'meaning'?" In one sense, the asking of the question is nonsense since it presupposes knowledge of the term. But in a larger sense, what sort of knowledge could this be? What sort of definition could be given for 'meaning' which did not presuppose a non-explicit dimension of meaning itself? I think this suffices to show how Quine's position, with regard to synonymy, once we look closely at its implications, becomes untenable.

A Priority and Revisability

When Quine and others attack the notion of analyticity, it seems to me they are "after" a priority. It will, therefore, be important for us to be clear on the relations between the necessity of 'a priori' statements and notions of the revisability of statements. Revisability might be simply expressed in the idea that "no statement is immune to revision."[10] This thesis has rather far-reaching implications for accepted notions of necessity when such notions entail notions of 'absolute' unrevisability. The problem seems to be quite frequently addressed in writings in the philosophy of science and in other areas as well. Two strategies are usually relied on. Either an appeal is made to the possibility of other "epistemic worlds" where what we know to be true statements are shown to be false, or, philosophers seem to be in possession of a "crystal ball" where cases are described in which future knowledge will prove present knowledge false. As examples, reference is usually made, in the latter case at least, to paradigm shifts in science. Now, in a way, the motivation of arguments of this kind is similar in nature to the "truth by convention" problem discussed earlier. That is, the aim is to show that what we regard as certainty can be subject to revision because it, in turn, really depends on something else--language rules, separate epistemologies, or future knowledge--that is itself, not absolute, but rather, revisable.

I want to argue that, first, the problem is that we cannot seem to get clear on just what it means to suggest that 'no statement is immune to revision', and indeed, we cannot seem to logically imagine what state of affairs would adhere if it were in fact the case. The

second problem might be expressed in this way. It is one kind of question to ask whether or not there are other epistemic worlds or whether or not the present content of knowledge will change. In light of what we know of science and the history of ideas in general we would all tend to agree to the possibility of such things. But it seems to me to be an entirely different matter to suggest that a given statement is not analytic or, because of this, that 'a priori' knowledge does not exist. To make such suggestions concerning particular statements would be to presuppose that we have, already, some explicit form of knowledge, logical or empirical, on which to base such judgments, and on the face of it, there seems to be no such form of knowledge. Therefore, even if we could manage to get clearer on what is meant by 'no statement is immune to revision', we may have no form of knowledge upon which to make judgments concerning whether or not certain types of statements are subject to revision.

We could indeed take a very short line here and suggest that to say that 'no statement is immune to revision' means, of course, that any statement whatsoever is revisable, and this must include those concerning logical principles themselves. Does this mean then, that the principle of contradiction could be false? The "quick" answer here is that if statements could be both true and false then the statement 'no statement is immune to revision' itself will be both true and false, and this, in turn, destroys all legitimacy of the claim. But perhaps the "quick" answer is not entirely fair to what is intended by the revisability theory. We may need to elucidate more thoroughly the intended meaning and implications of the assertion 'no statement is immune to revision'.

Thus, it might be argued that what is meant by 'no statement is immune to revision' is something like saying "It is possible that . . . so-and-so." An example might be the following statement: "It is possible that 2 + 2 does not equal 4 in another epistemic world." I say "possible" because it seems rather implausible that revisability theorists would assert that something actually is the case when no knowledge exists which would make it sensible to say of a given statement "It is true" or "It is false." Furthermore, this sort of meaning seems to leave enough "breathing room" between precise knowledge and speculative notions of other possible worlds. However, we are now faced with clarifying the notion of 'possibility' itself. This could easily become a major task, therefore, I will only sketch in rough form what seems to be implied by the use of the term in this context.

What we really imply, it might be said, when we use the term "possible" in this way is some form of probability or inference. The reply to this would of course be that to make a valid inference is to suggest knowledge or experience upon which it can be made, and to suggest probability in place of possibility is to suggest knowledge and experience on the basis of which a "degree of probability" could be calculated, and again, for statements of the type 'It is possible that 2 + 2 does not equal 4 in another epistemic world', there seems to be no such knowledge or experience. What then do we mean by "possible"?

It might further be argued that the point has been missed entirely. One could say, for example, that what we really mean is that when evidence is found, or when appropriate conditions of observation adhere, any statement will, in turn, be either true or false. I suggest this as a

plausible interpretation for two reasons. First, it seems consistent with the underlying intention of "revisionists," and that is to show that the necessity of logical truth is really not 'absolute' in any sense, but rather, revisable. In other words, even necessary truth could be shown to be false; in another epistemic world, '2 + 2 = 4' could be shown to be false. Second, revisionists must be making a claim of this sort if it is intended that the claim be taken seriously. In other words, if it were not the case that the statement 'It is possible that 2 + 2 does not equal 4 in another epistemic world' meant '"2 + 2 = 4" will be found to be either true or false', then assertions of this kind could not be seriously construed as a possible form of knowledge and be used in the way they are used in philosophical discussion. Take our statement 'It is possible that 2 + 2 does not equal 4 in another epistemic world'. Let us now call this proposition 'P'. Keep in mind, however, that 'P' could, in theory, represent any rather specific statement about other epistemic worlds or future states of knowledge. Then, in the case of 'P', it is not that 'P' <u>is</u> true or false, but rather that it will be found to be either true or false. This is the sort of thing that might be meant. The problem here, it seems to me, is a basic inconsistency between the premise upon which such an assumption is based and what was said earlier about construing such premises as a form of knowledge. The problem is, in other words, that when we insist that 'P' will be found to be either true or false we also implicitly assume that the following statement is true: 'That something is either true or false is true "absolutely"'. Let this statement be called 'Q'. (By "absolutely" true we mean true in all times and places. However, it needs to be said

immediately that the concept of 'absoluteness' is not one which is being directly examined in this thesis and therefore there is no intention of implying that any proposition or set of propositions could, strictly speaking, be regarded as 'absolute'.)

It may help to clarify by looking at a particular example. Let us imagine the most extreme example possible. Suppose that an advocate of revisability were to rather boldly assert that it may be found out by some master logician in the future that 'something could be and not be simultaneously'.[11] The expression of this in statement form might be 'It is possible that something could be and not be simultaneously in another epistemic world'. This would be consistent with those who would assert that any statement whatsoever is subject to revision. It seems to me that there is here the confusion of assuming the possibility that 'something could be and not be simultaneously' will be either true or false. In other words, we have a case where 'Q' is taken as true. And again, we are confronted with the issue in question--the status of such statements in relation to the present state of our knowledge. In essence, our advocate must declare the absolute status of one law of logic in order to refute the other. In order for his original assertion to be either true or false, 'Q' must be taken to be true. We would then have a case where 'something must either be or not be' is absolute, while at the same time something is shown 'to be and not be simultaneously'. But how is this logically possible? How would it be possible, at some time in the future, for 'something to be and not be simultaneously' while 'Q' is true? From this point of view such an argument simply does not work.

Overall then, it is not clear that sense can be made of the notion of revisability in terms of the revision of any statement whatsoever, since this would have to include those statements upon which intelligible argument depends. In other words, how could we recognize an argument for the revisability of logical statements as a rational one without presupposing the necessity of the logical principles themselves?

Does this point to the fact that laws of logic could not be subject to revision? Perhaps. Another possible alternative to our dilemma is to accept a classification of certain types of statements ('It is possible that 2 + 2 does not equal 4 in another epistemic world') as being neither true nor false. This class of statements would be just those statements for which no knowledge is available upon which judgments concerning truth or falsity can be made. This seems generally consistent with one of our initial problems concerning the scope and limits of present knowledge. However, the acceptance of such a classification would be at the expense of the law of excluded middle.

I am not against imaginative speculations. On the contrary, it could easily be argued that such forms of thought are the "seed" for new knowledge and are therefore requisite for the progress of ideas. It is, however, another matter when philosophers develop philosophical arguments based on statements of the kind being criticized here. In this discussion we have pointed to logical problems in the relations between 'possibility' and 'necessity'. Those who argue that all statements are revisable seem to defy the limits of our present knowledge and understanding and imply conclusions based on knowledge which we do not, in fact, have. Rather,

I propose only that we may need a re-examination of certain types of statements so that the epistemological value of such statements is neither diminished nor over-estimated.

Synthetic 'A Priori'

So far we have attempted to argue for the validity of the notion of necessary truth by focusing on analyticity and by considering a priority in relation to unrevisability ('absoluteness') as a necessary condition. It remains for us to try to decide whether or not there might be such a thing as synthetic 'a priori' knowledge. Quine dealt with this problem by suggesting that because no sense can be made of analyticity, we can say nothing certain about the distinction between analytic and synthetic. I would like to try to address the problem more directly, from the point of view of the accepted definition, to see if there are, in fact, grounds for the distinction that we do have. What then do we mean by synthetic 'a priori'? Recall that a synthetic 'a priori' statement is one which is necessarily true and yet it is one where the predicate is not contained in, and thus not analyzable from, the subject, and thus it is not self-evident in the sense earlier described. A.J. Ayer has raised a criticism to the effect that the apparent difference between a predicate being analyzable or not being analyzable from a subject is a distinction based on psychological criteria rather than on logical criteria.[12] That is, there are no grounds for the analytic-synthetic distinction other than psychological ones. He has suggested, for example, that Kant's ground for regarding a statement as synthetic is that the intension of the subject does not comprise the intension of the predicate, this, apparently, being a psychological

criterion; while the ground for regarding a statement as analytic is that it rests on the principle of contradiction, this being a logical criterion. Further, Ayer points out that the proposition '7 + 5 = 12' cannot be denied without contradiction (and I think rightly so). So in fact, it is suggested that Kant mistook a psychological argument for a logical one. However, I want to argue that the point of view we adopt on whether the analytic-synthetic distinction is valid, will depend on what we accept as logical criteria. I want to argue that, on the contrary, there seem to be logical reasons for accepting the distinction as we most commonly understand it.

Let us examine, say, the statement 'Anything that is red is not blue'. This statement can be regarded as 'a priori'; no special appeal to experience is needed to determine its truth, and yet it does not seem obvious that the predicate is already contained in the subject. Now, if those who claim that the analytic-synthetic distinction does not exist are correct, and yet our statement appears to be necessarily true, then it follows that we should be able to reduce the statement to one which is logically or self-evidently true. The reasoning might proceed as follows. 'Anything that is red is not blue' is true because 'Anything that is red is blue' is necessarily false; it expresses a contradiction. We might be inclined to say that the contradiction which it expresses may be put in a more logical form, 'Anything that is red is not red', and that this expresses a law of logic, or rather, in this case its contradiction, '(x and not-x) simultaneously', in the manner in which 'No unmarried man is married' expresses a law--'not (x and not x)'. The problem, however, with our synthetic statement is that it cannot

be expressed in logical form without presupposing the logical form it is supposed to express. In other words, in order to get from 'Anything that is red is blue' to 'Anything that is red is not red', we are faced with the very same problem with which we started, and that is, the problem of understanding the statement 'Anything that is blue is not red' as logically true. The terms 'blue' and 'not red' are not interchangeable, they are not synonymous. For them to be so would require that the statement 'Anything that is blue is not red' be self-evidently true. But it seems quite clear to me that this statement is of precisely the same class as 'Anything that is red is not blue'. The question now before us is whether or not to accept these grounds as reasonable for a distinction between analytic and synthetic 'a priori' statements. Indeed, these grounds seem to be acceptable, for it appears that although our statement is necessarily true, it cannot be reduced to one which is self-evident. In order to do so we need, it seems, an 'intuitively logical' step, and herein lies a subtle yet significant difference between analytic and synthetic 'a priori' statements; at least this seems to be the case with the statements examined here.

In summary, I should first say that it has not been my sole intent in these discussions to disprove the doctrine of "truth by convention," but merely to try to show either that, at least, 'a priori' knowledge is more than just a matter of convention, or, at most, that acknowledging "truth by convention" does not necessitate the disposing of 'a priori' knowledge. Second, the line of thought developed here far from solves

all problems of definition. Points of ambiguity still persist regarding many sorts of statements. For example, should a statement such as 'All men are mortal' be regarded as an empirical generalization? A case might reasonably be made for the notion of 'mortality' being "built into" the concept 'man'. Or, perhaps the predicate is not contained in the subject and yet the statement is true independently of contingent states of affairs? There may also be debate over whether or not it makes sense to talk of "degrees of analyticity."[13]

Nevertheless, I have tried to make a reasonable case for the meaningfulness and existence of 'a priori' knowledge and the validity of the analytic-synthetic distinction within this domain. There seems to be a significant enough distinction between analytic statements of the type 'No bachelor is married', and synthetic 'a priori' statements of the type 'Anything that is red is not blue', and empirical statements of the type 'The 57 bus goes to West Edmonton Mall' to warrant separate classifications. If this is correct, then there is no good reason why we should dispose of the names "analytic," "synthetic," and "empirical," that we give to these classifications.

What needs to be said concerning relations between 'a priori' knowledge and the 'form' of understanding can now be said in a straightforward way. We cannot achieve a meaningful sense of what accounts for relations between concepts, what therefore contributes to the intelligibility of concepts, unless we examine the simplest statements in which concepts comprise a constituent part. We cannot, that is, achieve a true sense of what organizes content--the 'form' of understanding, without examining the simplest and purest expressions of concepts and their relations.

Because 'a priori' statements are true by virtue of meaning and form alone, and are therefore free from the complexities of contingent states of affairs, they provide a clearer example of the organization of content. They provide a better view of what is non-substantive in expression. This was the main purpose of the investigation of 'a priori' knowledge in this chapter. Initially, the onus was upon us to show that the classifications we have for 'a priori' statements are indeed valid and informative. We now need to be concerned about whether this investigation reveals what could be a likely candidate for being a 'form' of understanding. My claim is that 'a priori' statements provide simple expressions of 'a priori' judgments, and that such judgments, exemplifying the laws of logic themselves, represent an 'a priori' mode of understanding which is a likely candidate for what I mean by the logical 'form' of understanding. It is a likely candidate because it is 'form' properly understood, that is, understood in terms of that operation of understanding by which content is related. Further, if this 'form' of understanding plays a role in relations between concepts in statements, it must also play a role in relations between statements and sets of statements. This assumption will be addressed in Chapter IV where the 'form' of understanding will be discussed as non-propositional in relation to theories and proofs. It is sufficient to state here that I regard this 'a priori' mode of understanding to be a likely candidate for the logical 'form' of understanding and therefore, I regard it to be a fundamental aspect of the very possibility of thought. However, it is one thing to elucidate the 'form' of understanding, and another matter to justify serious consideration of it in educational theory and

practice. It is this type of problem to which we now turn.

PART TWO. UNDERSTANDING AND EDUCATION

CHAPTER III

THE CONCEPT OF EDUCATION RE-VISITED

Considering the centrality of knowledge and its acquisition in education, it seems fairly obvious that one's epistemology should be consistent with one's philosophy of education. So far, the overall intention of this inquiry has been to provide the reader with a general view of certain problems in the theory of knowledge and how this is related to the 'form' of understanding. The task now before us is to determine just what implications such problems have for education. In this way, what will be said concerning educational matters will not be seen to be disconnected from what already has been said concerning related questions in epistemology.

As a preliminary to these inquiries I feel it necessary to start, so to speak, from the "ground floor" and work upwards. It will be worthwhile, therefore, first to look at the concept of education itself, since it is the case that one's concept tends to have an influence over anything else that can be said, philosophically or otherwise, about education. Roughly speaking, I will attempt to argue that there is no <u>one</u> concept of education by virtue of necessity. This will have rather important implications for the formulation of practical and realizable educational aims.

I shall work largely with that concept of education which has been developed by R.S. Peters. It is fair to say that Peters' contribution

to contemporary philosophy of education can hardly be overstated. One cannot investigate the literature without soon being confronted with the influence of his work. My intention in this chapter is not to try to refute Peters' concept of education or replace it with another, for in fact the position taken in this thesis is in general agreement with Peters' overall point of view. Rather, it is the intention here to make one or two methodological criticisms. The approach taken will be to "map out" the logical structure of Peters' argument and make criticisms at certain key points. It seems to me that certain aspects of Peters' position which have been often taken for granted are, in fact, suspect. For example, I will be concerned in the following discussion with the exact relations between the various conditions for use of the term 'education'; between, that is, the "desirability condition" and the "cognitive conditions" expressed in terms of the concept of the "educated man." Therefore, one question which will reoccur throughout is whether there is anything which resembles logically necessary conditions for use of the term 'education'. A case could also be made that certain subtle confusions exist between fact and value in Peters' concept of education. Again, it is not my intention to provide any important insights into the 'is/ought' debate or even to directly address this problem in any detail, rather, I will merely point to certain areas where slight confusions may have gone unnoticed. Also, I do not feel it is necessary to spell out at length all the details of Peters' concept of 'education as initiation' since this position is quite familiar to most philosophers of education although I will, at certain points, provide summary descriptions where

it seems most valuable to do so.

The Desirability Condition

Peters has stated that education means being initiated into worthwhile or desirable forms of life.[1] Such a definition of education, while perhaps being true, is almost entirely vacuous. It provides little or no aid in practical educational matters, and, from a purely theoretical point of view, provides no clue for answering the next obvious question, that is, "What are the worthwhile or desirable forms of life?" Peters admits that the value condition of desirability commits us in no way to any substantive factors in relation to it which will indicate what specifically we regard as worthwhile in education. Rather it is suggested that the value condition is "built into" the very concept of education, and this, it seems to me, is a good enough reason why we will want to consider whether or not it is logically necessary.

There are a number of counter-examples which might be mentioned which cast some doubt on desirability as a necessary condition. Besides serving this function, these examples may provide us with a "look inside" the types of examples being used by Peters and his critics and we may gain some insight into the way education is being thought about, and what for Peters constitutes a sufficient proof for a given condition being logically necessary.

It is suggested, in fact, that it would be contradictory to say something like "My son has been educated but has learned nothing worthwhile." This does indeed, at first glance, appear to be contradictory, except that is, for those who do not regard education as a valuable thing to pursue. Peters cites this example himself as being one that is difficult

to deal with.[2] The idea is that some individuals or group of individuals may agree with Peters in his description of education but not see the types of things associated with the concept, such things as book-learning, the pursuit of theoretical knowledge, etc., as desirable to pursue. They may in fact regard other things as worthwhile such as family traditions or folklore, and thus not see any relation of value between the use of the term 'education' and what they regard as desirable. Another counter-example worth mentioning is one that would be raised by advocates of some sort of vocational or technical training. In this case we may in fact have a group of individuals who understand and agree on what is desirable to pursue in education, and yet, for various instrumental reasons, decide that their education will be the pursuit of something else instead. There may be socio-political reasons, or reasons related to industrial or technological development, or other instrumental types of concerns. But we would have here a second case where what goes by the name 'education' is not necessarily what is most desirable to pursue in education.

The problem, of course, with the first counter-example is that it brings into play, in quite a natural way, certain cognitive conditions associated with the concept of an educated person such as the acquisition of knowledge and understanding, and we are, for the moment at least, only trying to decide if it is possible for the value condition to be logically necessary. We are trying, that is, to deal with the formal relations between desirability and education without the importation of substantive factors. Peters might immediately reply to the second counter-example that this kind of thing is reference to what are instrumental

aims and objectives, things that are, strictly speaking, extrinsic to education and not part of what it means to be an educated man. In addition, the second counter-example contains subtle ambiguities of meaning, some of which will shortly be discussed.

Whatever the case, it seems to me we have at least two instances in which it can be shown that a statement such as 'Education is initiation into what is desirable or worthwhile' is not always true, and therefore we have two possible cases in which the notion of desirability is not necessarily connected with the use of the term 'education'.

There is a more subtle and complicated problem running implicitly through Peters' line of thought and we must now take a moment to at least try to explicate it. It might be thought so far that Peters, when speaking about what is desirable in education, has been entirely concerned with what different groups of people decide upon as desirable. However, it seems to me that there is evidence to show that this may not be what he means by "is desirable." It will be my contention here that we cannot be certain at times whether, by "is desirable," Peters is concerned with what different groups <u>think</u> ought to be desirable, or, with what <u>is</u>, in fact, desirable. For purposes of discussion, then, we need to make a distinction. What I mean by "what different groups <u>think</u> ought to be desirable" is simply the case where different groups of individuals can be seen to decide on different things as desirable to pursue in education. In contrast, by "what <u>is</u> desirable" I mean a claim being laid to a form of necessary ethical truth. In this case it would be possible to specify certain true statements regarding education of the kind

"Education is . . . such-and-such" where "such-and-such" would amount to a more substantive expression of what, necessarily, was desirable to pursue as far as education is concerned (leaving aside for the moment questions about the specific content of such substantive expressions).

So what sort of evidence could be cited in favor of the possibility that there does exist such a subtle ambiguity of meaning in Peters' argument? It has been pointed out that, in effect, people can be seen to have all sorts of reasons, purposes and motives for engaging in education, and educational policy is determined on the basis of many factors. Peters, however, is primarily concerned with those aims, purposes, motives, and reasons the value of which he believes <u>is</u> educational, that is, intrinsic to the very concept of education and dependent upon the qualities of the educated man. Further, he is interested in pointing out that this ought to be the case as far as education is concerned. But Peters is interested in something more than this. It seems to me that what he wants, in addition, is to be able to make certain judgments cross-culturally. That is, he wants to be able to observe another community or culture, pick out its educational system, and decide that we should not commit ourselves to the values being taught there, or that what was being taught was somehow "bad" or "poor" education, or that what was being taught did not come up to some required standard.[3]

There are two problems we need to consider in relation to such cross-cultural judgments. First, to be able to make such claims in the first place implies that we would have something which resembled not just a theory of value with regard to education, but also a theory

of knowledge; it implies that we could provide a set of what we believed to be true statements about education upon which to base our judgments. Now, what type of true statements could these be? It seems to me that we would have two choices, empirical fact or logical certainty. If Peters is, in fact, concerned to make such cross-cultural judgments, I do not see how empirical statements would solve his problem. Empirical statements would simply point to the empirical fact that different groups of people regard different kinds of things as desirable to pursue in education. In this case, any empirical statement of the type "Education is . . . such-and-such" that was regarded as 'true' would simply tell us that a given group can be observed to hold "such-and-such" as desirable in education. It seems to me that Peters needs something more than this to "get around" objections concerning cultural relativism. Is our other alternative any more helpful, that is, logical certainty? Indeed it would be if it could be shown to be the case. This would be to show that there are true statements concerning what is desirable to pursue in education and that these statements are true on logical grounds, and this would be something separate from any variety of contingent circumstances. The question is, of course, whether or not Peters has managed to provide any such logical grounds.

Second, such cross-cultural judgments present another problem which may best be put in the form of a question. One might ask with regard to another group or culture, "On what basis or upon what criteria would we be able to initially 'pick out' and evaluate the educational system of that culture?" (What I want to say here is perhaps less relevant

for communities similar to our own and more relevant for quite different cultures and groups.) If this is the case, two related points can be made: (1) we may reach a point where, upon recognizing a certain enterprise as fulfilling our criteria of education and therefore recognizing it as education, we would begin to contradict ourselves in saying that what we were observing was somehow "poor" education or did not, in some way, meet our standards of what is worthwhile, and (2) this tells us, I think, that problems of differing cultural perspectives are rather too complex to be used as strong arguments to show that something is or is not the case concerning our own concept of education. Rather, it seems that the opposite is the case. Our concept of education would need to be shown to be logically consistent from within itself, since, if such a thing could be shown, it is, after all, the only basis upon which cross-cultural comparisons of the kind Peters wants to make, could be made.

Other evidence could be cited to show an ambiguity in meaning by re-examining the two counter-examples described earlier. Let us for the moment imagine that Peters is telling us what is, in fact, desirable, and that this can be demonstrated on logical grounds. If this were the case, we could then put aside our first counter-example. To say that what is desirable in education is logically certain, amounts to saying that those who do not regard education and the conditions associated with it as desirable, are simply mistaken. However, the second counter-example, concerning extrinsic values, is not so clear-cut. It seems to me that laying claim to some form of necessary truth concerning what is desirable in education is the only way in which Peters could say what

he does say about examples of this type. Remember that this second counter-example consists of a debate between the advocate of Peters' concept of education and the advocate of vocational or technological training. Now, strictly speaking, there does not seem to be much that is unacceptable about educators pursuing certain extrinsic aims in education if these aims, although not regarded as most desirable, are agreed upon as being somehow necessary or beneficial socially or economically for example. Some aims in education can be and have been shown to be instrumentally valuable. However, note the following statements by Peters: " . . . , the advocate of education might reply that the economist's position is ultimately incoherent."[4] And just previous to this, speaking about extrinsic aims, "But this would be impossible if education means the initiation of people into a worthwhile form of life; for how could there ever be any end of value beyond this which it would be possible to bring about?"[5]

What could be meant by "ultimately incoherent"? It seems to me that the advocate of vocational training (the economist) would, in fact, be incoherent if he was concerned not merely with what different groups think ought to be desirable, but rather, with a form of ethical knowledge providing an answer to the question "What <u>is</u> desirable in education?" Regardless of how different groups of individuals are seen to behave, this advocate's position could be judged unacceptable, at least from a philosophical point of view, simply because of a basic inconsistency. In other words, we would find it quite odd, and indeed rather contradictory, for someone to claim to know what <u>is</u> desirable to pursue in education, and then not pursue it. Herein lies a distinction, albeit a difficult

one to describe, between judgments concerning what different groups think ought to be the case, and judgments based on claims to knowledge of what actually is the case. My point is that if Peters is laying claim to knowledge of the latter type, which indeed, it seems he has to do in order to judge different forms of education as "poor" or certain values as not worth pursuing, then this knowledge must be shown to be true on logical grounds.

My overall contention has been, then, that as far as the desirability condition is concerned, we cannot be certain at times just what Peters has in mind. The criticisms made in this section can be summarized as follows:

1. It seems very difficult, if not impossible, to examine the desirability condition in isolation from the substantive conditions which give it meaning. We cannot "put the value condition to work" without having in mind some idea of what Peters thinks desirable, that is, we cannot avoid those qualities and states of mind which characterize the educated man.
2. It can be shown that in one or two cases the statement "Education is initiation into what is desirable or worthwhile" is not always true. Our initial discussions of the counter-examples were relevant to this.
3. There are certain ambiguities in meaning concerning what is desirable to pursue in education. I have argued for a distinction between what is thought to be desirable and what is desirable. Peters wants to make cross-cultural judgments which presuppose what I have called 'knowledge of what is desirable'.
4. Debate over extrinsic and intrinsic aims in education gives rise to

questions related to the logical justification that can be given for each of these choices. (This issue will be further addressed in the next section.)

5. Finally, it might be argued that if one lays claim to knowledge of what is desirable, and if one does this merely by reference to empirical observations, then one implicitly commits oneself to what is thought desirable, and not to what is desirable. Logically necessary conditions cannot be provided by contingency alone. Peters seems, at times, to be laying claim to knowledge of what is desirable in education, but he has not given us much that resembles logical necessity.

Cognitive Conditions

My purpose in the previous section was to draw attention to the possibility that the notion of the value condition being a logically necessary condition for the use of the term 'education' is a rather untenable notion. In this section I want to examine more closely the question which seems to naturally arise from the value condition already discussed, and that is, "What things are desirable or worthwhile in education?" This leads us directly into those qualities and states of mind which characterize the educated man, that is, the cognitive conditions. The idea here, and this concern was expressed by Peters, is that it is perhaps this set of criteria which is logically necessary for use of the term education and that the desirability condition is, in turn, dependent upon them. In this case, the qualities of the educated man are the kinds of things that are, as a matter of logical fact, associated with education. This makes aims of education which are based on the

concept of an educated man intrinsic to the very concept of education itself, and it also happens that these are the kinds of things which it is thought desirable to pursue. Let me for a brief moment summarize once again the cognitive conditions. They are: (1) knowledge and understanding of fundamental principles of forms of thought. It is required that an educated man have an understanding of the "reasons why" of things and a conceptual scheme for the organization of this knowledge and understanding; (2) a commitment to standards intrinsic to forms of thought. One demonstrates a commitment to, say, the standards of scientific inquiry such as precision, logical clarity, respect for evidence, objectivity, and also cares about these standards of inquiry; (3) breadth of cognitive perspective. An educated man must not be just narrowly specialized, he must see what he is doing in the larger scheme of things. A scientist, ideally, should be sensitive to social implications, he should know something about literature, and also know what it means to be creative; (4) the outlook of an educated man is transformed by what he knows. It is not enough that the educated man be 'knowledgeable' in the sense that his knowledge is used only in restricted contexts such as classrooms or in examinations. Acquired knowledge and understanding must permeate his way of looking at things, it should effect his whole range of actions and responses in the living of life. A depth and breadth of understanding should be manifested in the entire living of one's life. I want first to examine the last three conditions, and then turn attention towards the 'knowledge and understanding' condition. The reason for this will be my eventual contention that this condition is the best candidate we have for being a necessary condition

for the use of the term education.

First, then, commitment to the standards of disciplines or forms of thought. There are a number of brief points that can be made here. If we look for a moment at common uses of the term 'education', I think we can easily find examples of inconsistencies between the way we tend to use the term 'education' and what we think we understand as being 'commitment to standards'. Very simply put, there are people who are generally regarded as educated, but who are not committed. We see examples of various professionals who very quickly become committed to certain forms of success, and certain kinds of lifestyles which are quite far removed from providing the quality of service for which they were educated. And it is not just that we see a combination of interests which are both intrinsic and extrinsic to education, but rather that we see the commitment to the latter at the expense of the former. So much for arguments from common usage. There is no need to labour these points.

There is, however, something more important to be said about commitment. We could ask the question "What does commitment to standards really mean?" Now, when we want to find out what commitment means, we might be inclined to look around for examples of it, that is, we would look for manifestations of commitment. We are then asking, in a way, whether or not this particular cognitive condition can be observed and evaluated, or in other words, whether it can be defined. Very roughly speaking, we might say that commitment refers to a certain type of action which is based on a certain quality or state of mind. Where do we find such examples? We may be inclined to look for such examples in demonstrations of "reasoned understanding" of the principles inherent

in a discipline or form of thought. Understanding and consistent use of these principles, we might think, is a good indication that someone is committed. The problem here is twofold. First, we are not able to "get past" the common usage argument mentioned earlier. Someone can practice a profession, demonstrate knowledge of principles, and yet not be committed. Second, we would have the case where commitment, as a cognitive condition, was actually dependent for its recognition upon the first cognitive condition, i.e., knowledge and understanding. This would in fact be the case if looking to demonstrations of understanding of principles was the only way available to confirm commitment. There would, in essence, be no cognitive condition of commitment as distinct from the reasoned understanding of procedures inherent in a discipline. But if we found these types of observation to be unsatisfactory, we might simply ask about commitment. That is, we might simply ask someone whether or not he or she was committed, and we would then have to accept the answer that we received as being true. The problem here is that to accept the answer as true is to presuppose that the individual in question is already committed to what surely must be one of the most fundamental standards intrinsic to any form of thought, that is, the commitment to truth. We would, in essence, already be assuming commitment to the fundamental standard which is in question, and this does not in itself seem to help us in understanding commitment as a distinct quality.

Generally, what is implied here can be put in the following way. The standard of truth in, say, science, <u>is part</u> of the principles and procedures inherent in the discipline itself, and this is the case not only in science but in other disciplines as well. So, when one observes

the reasoned understanding of the principles inherent in science, one is, in a sense, observing a commitment to truth. The problem is, how are we able to identify commitment as a condition distinct from the reasoned understanding of procedures? Now of course if a scientist was found "cooking the evidence" we would then be inclined to conclude that such a person was in fact not committed to the fundamental procedures in science, including truth. But it seems to me that, first, there is no real need for debate over these sorts of cases. Second, this amounts to only a partial answer to our question concerning how we are able to identify commitment as a distinct condition. We can only recognize commitment by pointing to the lack of its presence. As such, it cannot be informative in those cases where a scientist practices his profession, demonstrates knowledge of principles, and yet may or may not be committed. In other words, we are not able to use 'truth' as a criterion of commitment when commitment to truth is part and parcel of the procedures which define a given discipline. If this is correct, then in effect, all scientists who demonstrate reasoned understanding of principles and who are not seen "cooking evidence" are committed. But this merely amounts to all practicing scientists who are not caught "cooking evidence." This does not, strictly speaking, provide sufficient criteria of identity for commitment as a distinct condition of an educated man, let alone a necessary condition for use of the term 'education'.

The condition of 'breadth of cognitive perspective' or breadth of understanding is indeed a quality that quite naturally becomes associated with the notion of being educated, at least this seems to be the case. We would surely want an educated man not simply to be able to "do" things,

but also to understand the larger implications (social, political, moral etc.) of what he was doing. There are again two points to be made with regard to this condition. The first, I think, is rather obvious. It is, briefly, that the condition gives us really no indication of the limits to 'breadth of perspective' that need to be achieved before this condition is fulfilled. Does an engineer, say, need to study literature and mathematics, or besides this, philosophy, history, and art as well? Indeed, it could be argued that there are no limits to 'breadth of perspective', and that this is one reason why the condition as it stands, although perhaps important to think about, is of very little help in formulating more precise educational aims which can, in turn, be used to guide the course of education.

The second point is really an extension of the one just made. Peters has closely associated 'breadth of understanding' with the notion that education is, or should be, 'education of the whole man'. He has in fact stated, "When educationalists proclaim that 'education is of the whole man', they are enunciating a conceptual truth; . . . "[6] This may, indeed, be a conceptual truth, but, I suspect, not for reasons intended by Peters. To regard such a statement as a conceptual truth is to take for granted that there exists some clearly defined and agreed upon set of criteria for what a 'whole person' is. So as not to give the impression of any sort of trivial or ambiguous treatment, it might be valuable to take a moment to examine this concept more closely.

'Education of the whole man'? In recent times in writings in the philosophy of education, and in other educational areas, we have seen the emergence of the concept of "wholistic development," perhaps not exactly a

new idea but one that has indeed received considerable attention due to what might be called a newly perceived "need" in education. A discussion of education as "education of the whole man" could very easily take on a great many dimensions and surely could be an issue to which an entire investigation could be dedicated. So as not to "stray" too far from the topic at hand, I will confine the discussion to what seem to be the most immediately relevant ambiguities.

Certainly this idea as an 'aim' is one that most educators would be inclined to take seriously. It seems, in itself, an aim that would be important and naturally worthwhile to fulfill. However, I suspect there is a subtle problem in the approach that is taken by many writers on this issue and I want to try, as best as I can, to clarify what I mean by this without detracting from the validity of the idea itself, which, I think, is one that is important and should be something that educators are thinking about.

We might try to clarify this problem by examining what seem to be the fundamental assumptions which underlie the notion of wholistic development and try also to describe in more explicit terms this perceived need in education. This need could be described as a need to correct or make improvements on a certain inadequacy in educational outcomes. Educators may have become aware of the fact that education is producing one-sided individuals. Too much stress is being placed on the intellectual side of development, that is, attention has been paid almost exclusively to academic disciplines and traditional teaching (mathematics, chemistry, physics, history, and so on) and not enough attention has been paid to other aspects of growth such as the emotional side of the person, the

creative side through involvement in the "expressive" disciplines, and to the ethical side through moral education. The line of thought is that these are important aspects of the idea of the "whole person" and deserve attention to the same degree. There is even sometimes expressed the idea that the education of these different aspects of the individual amount, really, to different forms of knowing; that to know aesthetically or morally is something different from knowing scientifically. This type of philosophy has, to a certain extent, brought about a "shift" from what might loosely be called traditional educational approaches to a more "child-centred" approach. It has brought along with it changes in content and method that are adapted more to the immediate and personally felt needs and interests of the student.

Now it seems to me that one of the notions at the basis of all this is that somewhere along the way, the learner has become "fragmented," that due to numerous influences, perhaps not all educational, the learner has somehow split into unrelated parts, is, in some way, disintegrated. Further, it is assumed that the primary task of education has now become the task of "collecting together" these different aspects of the individual to try to re-integrate or bring about a synthesis. It is thought that this "fragmentation" can be attended to through the teaching of different subjects which nurture the development of the individual's various aspects and forms of knowing.

What criticisms can be raised to this line of thought? First, it might be argued that this fragmented definition of man, in fact, goes against the grain of a more "naturalistic" interpretation. It might be suggested that the child comes to the educational system already

whole, or at least potentially so. When we nurture the understanding of the learner we do not do so with three or four different people, but, in fact, with one person. It might be argued that we have a natural tendency to think of the 'individual being' as a whole, and that it is unnatural for us to assume, in the first place, that the learner is subdivided into "aspects." It might be the case that the whole notion of fragmentation is a mere " construct," and really expresses little concerning the reality of the actual state of man. It might be the case that learners in fact become fragmented after exposure to an educational system based on the assumption that different aspects of the individual can be "treated" by the teaching of different subjects. Further, along similar lines, it might be argued that we have mistakenly assumed that intellectual development does not make its contribution to moral development, or that creative development does not effect the intellectual side. This would be in line with the "fragmented" approach.

If it is, in fact, the task of education to "educate the whole man" then specific aims will have to be implemented in order to bring about the desired outcome. This will require analysis of at least two dimensions: (1) first, we will have to know much more about how exactly the individual is fragmented. In other words, are everyone's needs the same? (2) second, we will need to have a reasonably agreed upon idea of what, in fact, a whole person is. In order for wholistic education to be transposed into aims that can guide content and procedures we will need a generally agreed upon description of a whole human being. The problem is, of course, that there does not seem to be a commonly agreed upon description. Peters equates the whole man with "breadth of cognitive understanding," that is, exposure

to a range and variety of disciplines. Others might require much more besides this. They might require, in addition, a high level of physical development, or all this accompanied by extensive spiritual development.

Finally, it could be argued that the idea of wholistic development carries with it the notion of extensive duration of time. The concept of a 'whole person' tends to be a concept of very large, highly generalized scope. Activities directed towards this type of goal are of the kind which would tend to go on during one's entire lifetime, and which may not always be related to things we commonly understand to be education. It is criticisms such as these that allow us to ask whether or not this is the type of aim upon which more specific objectives can be realistically based. This question may be particularly relevant for, say, primary and secondary education.

It seems to me that essentially the same criticisms could be made concerning 'a transformed outlook' as were made against other qualities of an educated man. The notion of a transformed outlook suggests that one's learning and understanding is carried over into many if not all other aspects of daily living. What is learned is not just learned for the purposes of passing exams and is not "hived off", so to speak, after one has fulfilled a given set of requirements or has met certain standards. There must be shown to be relevant and important influences between what one understands theoretically and how one "sees" in practical terms.

This condition is, in a way, similar to commitment to intrinsic standards, secondary, or "parasitic" upon the condition of depth and breadth of understanding. In order for one's outlook to be transformed

by what one knows and understands, one must first, of course, know and understand something. Further, it seems likely to be the case that one would need to know and understand quite a lot of things in depth before we could say with any seriousness, "That person's outlook has been transformed by what he knows." So it might be the case that this particular condition is dependent not just on acquisition of knowledge but also on the possession of some significant "breadth and depth" of understanding. Indeed, this again raises the question of how we would go about observing a transformed outlook. If we were to observe someone, say, who related theoretical history to his surrounding architecture or his present socio-economic situation, or related the historical implications of science to the Technological Revolution, or who related problems of social anthropology to ethnic and political problems in his own community, would we be able to tell whether what we were seeing should properly be called a 'transformed outlook', or a 'broad cognitive perspective'? To put this more succinctly, would there be a case in which we would be inclined to say that one's outlook had been transformed but that this same person did not possess much in the way of depth and breadth of understanding? Some critics might argue that this type of distinction is too rigid and unnecessary. The point has been merely to show the way in which, at times at least, the condition of a transformed outlook, in addition to the notion of 'commitment', is being described not so much as a primary condition, but rather as a manifested outcome of the attainment of knowledge in depth and breadth.

Finally, we could argue that, similar to the idea of the 'education

of the whole person', a transformed outlook is something often thought of as being associated with other factors besides the acquisition of knowledge and understanding and is, indeed, something to be attained only over extended periods of time or in special circumstances. (I have in mind factors not necessarily associated with book-learning such as a certain level of maturity and wisdom, or a certain type of "worldliness" acquired from life-transforming experiences, for example, the death of a close friend or relative, deep religious or spiritual commitments, or intense life-threatening situations.) In other words, the manifestation of such a characteristic may be dependent upon factors which are well beyond those usually associated with education and dependent upon factors over which education may have little or no influence. As such, it is likely that different forms of such a characteristic would be manifested in various ways depending on differences in circumstances and individuals concerned. So again, we could ask the question of whether or not this condition makes available for us more specific aims on the basis of which we can plot the course of educational practice.

Intrinsic Value

Various types of criticisms and counter-examples of the kind just discussed could be raised which would serve to cast varying degrees of doubt upon one or another of the cognitive conditions described by Peters. It has not been my primary intention to try to refute the practical validity of these conditions as generally accepted characteristics of an educated man, but, simply, to look critically at their basis. Rather, I think what is more important now is that we redirect our attention toward what seems to me to be the strongest condition or characteristic

of an educated man, and that is, the condition of knowledge and understanding.

One could argue that, indeed, if there is any condition which could be logically necessary for the use of the term 'education' it must surely be this condition. One might be inclined to say the same thing about knowledge and understanding as was said about the desirability condition. One might say, that is, that it would be contradictory to suggest that a person could be educated, or could receive an education, and yet not be said to possess knowledge and understanding. Peters has, on various occasions, made this quite clear. It seems that part of what we would be saying is that the term 'education', as it is predominantly used, points to the kinds of things that go on in schools and universities, and surely this includes, to a significant extent, the acquisition of knowledge and understanding. But is there anything more to be said about the relation of this condition to the term 'education' and the concept of an educated man?

I want to begin to address this question by examining what is meant by 'intrinsic value'. This is a fairly central idea in Peters' theory and is, in fact, a notion involved in one of the conditions of the educated man discussed in the previous section, i.e., commitment to intrinsic standards of a discipline or form of thought. Peters does, of course, qualify by insisting that this condition may be a necessary condition, but is certainly not, by itself, sufficient for being educated. Other things are required such as knowledge and understanding, in depth and breadth, and a transformed outlook. I want to argue, however, that

there is an important distinction to be drawn here. This distinction can be explained by suggesting that the condition of 'commitment' described by Peters is primarily a description of a capacity, quality. or state of mind; a capacity by virtue of which one is inclined to engage in or pursue activities for what one finds in them rather than for extrinsic reasons or motives. But this does not, by itself, conclusively show that what is being pursued or engaged in is valuable or worthwhile in itself. An example may help for purposes of clarification. One can engage in, say, golf, for instrumental reasons. These might include fresh air, exercise, or a desire to meet influential people or belong to an exclusive club. One can also pursue golf because of what one finds in the game itself. When asked the question "Why play golf?" the answer given by the individual who plays the game for the game itself is, "Because I love it!" This is the golfer who in fact expresses a commitment to the standards which make the game what it is. However, this does not make golf (1) valuable in itself, or (2) necessarily an educational experience. It expresses merely a capacity of the individual to find intrinsic value in his engagement with activities, and, it seems to me, one could widely direct this capacity.

Now there is a logical difference between the pursuit of golf and the pursuit of knowledge and understanding. I think we can make this somewhat clearer by referring to the discussion by Peters of the value of justification. Since this argument is quite familiar to philosophers of education I will not extensively elaborate on the content of the argument here. I will, rather, present only a "sketch" of the logical conclusions. Peters discusses the value of justification in

relation to the value of truth and the value of reason itself. He suggests that the "demands of reason" are inescapable in human life. Any choice between x and y means one is involved in forms of discrimination and understanding which, in essence, constitutes a concern for truth. Those procedures whereby one engages in the search for truth are in fact those procedures in which knowledge and understanding are manifested in the giving of reasons. To ask for reasons is to ask for what can only be found through knowledge and understanding. Therefore, when one asks "What is the value of justification?" one is, in essence, asking for reasons for or against it, which in turn, presupposes a commitment to the value of the very activity in question. The theory contains in it an important justification for the pursuit of truth and for the pursuit of knowledge and understanding.[7]

The point to be made here is that asking for justification for the pursuit of knowledge and understanding, or asking questions about the value of justification is quite different from asking about justification for, say, the pursuit of golf or swimming. The difference, it seems to me, lies in the fact that the pursuit of knowledge and understanding is self-justifying; the value of such a pursuit is intrinsic to the very process itself. This can be shown to be logically necessary, and therefore what is known can be said to be objectively true. It can be expressed by suggesting that it is, in fact, a contradiction to ask "What is the value of justification?" and then to deny a commitment to that very thing. When one commits oneself to what is intrinsic to golf, one expresses a form of subjective knowing in the sense that its

pursuit is valuable only to one who has that interest. It is no contradiction not to commit oneself to what is intrinsic to golf. To commit oneself to the pursuit of knowledge and understanding is to commit oneself to the value of something which, by virtue of logical necessity, goes beyond subjectivity. Herein lies the distinction I was anxious to make and it seems to me to be what Peters means by the "other sense" of worthwhile which refers to the 'intrinsic value' of things.

The asking of these types of questions brings us directly in line with an important related question. Is it the case that if we could point out those things which were in fact desirable in themselves, would we then have something that was necessarily connected with education and the educated man? It seems that some things can be shown to be desirable in themselves, for example, justification and the pursuit of knowledge and understanding. Does this represent something which is "built into" the concept of education? Indeed, one could argue that a case could be made quite easily along these lines, and it seems, at times, as if Peters and his followers have done just this. As was mentioned earlier, I think it could be said that the acquisition of knowledge and understanding is almost synonymous with the term 'education' as it is now used, and I think someone who made this claim would be, generally, quite right.

There are, however, one or two final points that might be made. First, what we would not want to do is to assume that the pursuit of knowledge and understanding is part of education in the sense that it is a necessary condition for use of the term because the pursuit is found to be desirable. If something such as this was assumed, it would of

course depend upon the value condition (desirability) being a logically necessary condition for use of the term 'education'. In other words, it would depend upon the statement 'Education is initiation into what is desirable' always being true, but various types of counter-examples can and have been raised to show that this does not seem to be the case. It is therefore unlikely that this line of proof is open to us. When we show, even on logical grounds, that the pursuit of knowledge and understanding has intrinsic worth, we demonstrate only the fact of that pursuit itself as being desirable. It remains to be shown that the connection between the pursuit of knowledge and understanding and the term 'education' is a necessary connection, and this must be shown on logical grounds and not merely by contingent circumstances if what we are seeking are logically necessary conditions.

Now it might further be argued that the necessary connection we need is the one which exists between 'education' and the concept of an educated man. Knowledge and understanding are characteristics or conditions of an educated man--they are part of what it means to be educated. In turn, the term education refers to that which brings about the state or condition of being educated. In fact, it might be argued that a statement such as 'Education is what brings about the state of being educated' is sufficiently tautological to provide a necessary connection between knowledge and understanding and education once the conditions of an educated man are more clearly spelled out. One might reply, however, that the relation between education and the concept of an educated man is not nearly so secure. It seems that when people engage in what is most commonly understood to be education, they

often fail, according to Peters, to achieve or fulfill the conditions required for being educated. In other words, the kinds of things which go on in schools, attainment of a certain amount of knowledge and understanding, graduation with various types of degrees, and so on, are not sufficient for fulfilling the conditions for being an educated man. In addition, when we decide to look about for actual examples of educated men, they are, indeed, hard to find. The point is that Peters himself has claimed on more than one occasion that the term 'education' and the concept of an educated man are, in fact, evolving and changing, and they have not done so on exactly the same lines. At one time, for example, the term 'education' was not associated with the systematic acquisition of knowledge and understanding, but was rather used, and may still be used, in a much more general sense as when we might refer to just any sort of rearing or training. These arguments and descriptions are in fact etymological arguments and descriptions, and in short, they may be the best arguments and descriptions we have for elucidating the relations between the term 'education' and what it means to be an educated man. They are not, however, arguments in terms of logical certainty.

In light of the previous discussion, one tends to take a skeptical position which can be expressed in the following way: strictly speaking, there appear to be no logically necessary conditions for the use of the term 'education'. This statement must be qualified by the phrase "strictly speaking," and what I mean by this is simply that a theoretical analysis is here being proposed in which the required conditions of proof are as "strict" as possible, more strict, perhaps, than many readers of Peters would be prepared to accept. The overall implications of this

discussion are, then, fourfold:

1. It has not been my intention to try to refute the practical validity of the general position as presented by Peters. Indeed, it seems that he himself accepts similar conclusions. Note the following statements; "It looks, therefore, as if the concept of 'education' is a very fluid one. At one end of a continuum is the older and undifferentiated concept which refers to just any process of bringing up or rearing . . . There may be uses which link it just with the development of desirable states . . . ; there may be uses which pick out the development of knowledge . . ."[8]
2. Rather, the intention has simply been to "map out" the logical construction of Peters' argument for the purpose of bringing to the forefront the single cognitive condition of 'knowledge and understanding' that I wish to further discuss.
3. I have tried to argue that there is no <u>one</u> concept of education by virtue of logical necessity. This will be important for us to keep in mind when the condition of knowledge and understanding is re-stated as a fundamental aim in education. The formulation of such aims and the objectives which stem from them must be seen in the proper light of the type of relations which adhere within the concept of education itself.
4. It was also my implicit intention to try to show that we may need other ways of talking about education. There seem to be limits on what an analytic methodology has to offer for the solving of practical and conceptual educational problems. Peters' concept of "education as initiation" is general and abstract. As such, we cannot get a

clear "picture" of what education might be at a more practical level, and of what role notions of 'understanding' would play here. We do not get any clear sense of what might in detail be involved in the experience of education. It is to these types of problems that the next chapter is devoted.

CHAPTER IV

UNDERSTANDING AS AN AIM IN EDUCATION

Aims in Education

We need to remember that processes of education are very practical activities. Philosophical inquiry as applied to educational practice can, therefore, sometimes be troublesome in that one attempts to say something logical about something that is, in essence, practical and quite diverse in the various considerations that go into decisions about it. Nevertheless, there is one area in which philosophers can claim some expertise and make certain contributions which will have practical implications. This is, of course, the area of educational aims. These types of considerations are philosophical considerations about what one is trying to accomplish in education. As such, discussions about aims are, or ought to be, subject to something we might call the 'logic' of educational aims. This logic is universally applicable for education and can be expressed in the following way. Any decisions regarding what is to be taught and how it is to be taught will to some significant degree be based on what is to be learned. In turn, decisions about what needs to be learned stem directly from more generally specified objectives expressed in part in terms of curriculum content in the form of subjects. These objectives are, or should be, more specific statements of general aims. One would not sensibly go about formulating objectives and designing curriculum for the purpose of teaching and learning without first being reasonably clear on what were the overall aims of the enterprise. In this way,

educational aims play a fundamental role in educational decision-making. In this way also, the activities of teaching and learning are, by their very nature, goal-directed activities.

However, it is not the case that any aims or objectives will do. When we make these types of decisions we, in fact, make a choice. We do not choose just on the basis of what is presently available and practical, but rather on the basis of what we think is 'best'. Educational aims then, not only represent guidance for specific educational activities, they, in a sense, "reflect" the values and desires of those who formulate them. This brings us directly to the concept of education. Educational aims tend to be a more specific expression of the general notions that one holds concerning such things as the relation of education to the quality of life, the function of education in society, and so on. They reflect our "largest" and most general ideas concerning what education ought to be.

It will not be the intention of this discussion to enter into detailed questions of value, although to a certain extent when discussing educational problems, it is unavoidable. Some of these types of problems were raised in the previous chapter in relation to Peters' concept of education. The point of the criticisms made there could be summarized in a slightly different way. The 'logic' of educational aims points to the fact that aims reflect our concept of education. A problem occurs, it seems to me, when educational aims are too closely formulated on the basis of idealistic aspects in concepts of education. This criticism was implied in regard to Peters' concept of the educated man. The idealistic element can also be seen in what I will call aims with a

"second-order dependency," that is, a dependency upon the acquisition of knowledge and understanding. (I have in mind certain cognitive conditions such as 'a transformed outlook' which were mentioned in the last chapter.) What we tend to do is to decide on educational procedures on the basis of aims such as these, never being able to reach decisions on practices and their relation to the fulfillment of aims because the aims, derived in part from unrealizable aspects in concepts of education, tend to be themselves, in a way, unrealizable. We are then not in a position to make various sorts of judgments on the best educational practices even in light of the fact that the logic of educational aims as described here seems to provide us with reasonable and logical procedures for educational decision-making.

However, there is another point of view to consider. The fact that we cannot pass final judgment on educational procedures is, perhaps, somewhat to the good. It might easily be argued that it is not possible or even desirable to place "absolute" criteria on what constitutes an educational process. We do not want to exclude the possibility of new and innovative approaches to teaching and learning. In fact, it seems to me, we want to encourage this type of thing. What all this seems to mean is that educators will have to accept the fact that decision-making in education is dependent upon diverse considerations. It means that various kinds of considerations can go into a final decision, and practices based on this must be viewed experimentally and developmentally, that is, flexible and subject to change. It would be a mistake, then, to assume on purely logical grounds, that the nature and scope of what constitutes educational practice can be or should be strictly set. We cannot, that is,

suggest on strictly logical grounds that necessary relations adhere between a particular aim and a particular practice. The question, then, is "Should philosophers of education pursue their discipline under the assumption that practical educational problems can be solved strictly by conceptual means; as if somewhere within the conceptual domain of education there existed 'a priori' knowledge, or logically necessary connections by means of which the course of educational practice could be 'plotted' once and for all?" The problem is compounded, it seems to me, by the tendency to apply unrealizable aims in the solutions to problems concerning what is, in essence, a very practical activity. Philosophers of education seem to be faced with a "double-edged" dilemma; on the one hand they do not want to dictate absolute criteria for educational processes, while on the other hand, they cannot strictly establish what is or what is not the case as far as priorities are concerned merely on the basis of idealistic elements in concepts of education, or aims derived from them.

I want to suggest a certain approach as a partial solution to this problem. So as not to create any further confusion concerning the position being advocated in this thesis, I want to make clear immediately that I am, in general, in agreement with those positions that argue for a concept of education based "fairly and squarely" on considerations of knowledge and understanding. It is, of course, implied in this that a primary and over-arching aim in education should then be the acquisition of knowledge and understanding.

Consider again that certain inconsistencies exist depending upon the particular way one thinks about and chooses one's concept of

education. This, in turn, has implications for the acquisition of knowledge and understanding as an aim in education. We are sometimes inclined to think about education in very "large" terms, as encompassing all forms of learning and training, or, in other words, as encompassing the living of life. If we opt for the all-encompassing concept of education then it seems to me that we are conveniently able to fit all cases of learning and training into our concept, and we will easily accommodate diverse uses of the term 'education' when that term marks out various kinds of learning, training, socialization, indoctrination and so on. If we opt for a more restricted concept of education, and it seems to me that this is what we do most of the time, simply because of the fact that we want education to be a sustained and organized activity, as in school, for example, then it assumes that we also opt for and take seriously, or surely we ought to, certain types of clearly formulated educational aims and objectives whose purpose is to provide direction for educational practice. The difference here is quite obvious. It might be expressed by asking, "If we opt for the all-encompassing concept of education, how does this then translate into educational objectives?" The answer surely is virtually, "Anything goes." If we agree that education is more specifically the sustained and organized pursuit of, say, the development of reason, or rational mind, then it means that we commit ourselves to specified aims and objectives by which such a concept can be realized. Further, if we understand that such a thing as the development of reason necessarily means the acquisition of certain kinds of knowledge and understanding this also commits us, to that extent, to knowledge and understanding as an actual aim in education. This is

the position I wish to advocate here, and it is what I intended to mean by suggesting knowledge and understanding as a primary aim in education. Further, it may now be helpful to translate this aim into language more applicable to the concerns of the practicing teacher. The primary objective, then, of the practicing teacher is to enliven and develop the understanding of the individual learner. It will be one of the main tasks of the following discussion to clarify and develop the meaning of this objective.

Since it was suggested in the last chapter that no logically necessary conditions adhere, strictly speaking, for the use of the term 'education', we need to show good and practical reasons why we should and do, in fact, think of education in terms of knowledge and understanding. In other words, once we decide, and it seems we have decided, that the acquisition of knowledge and understanding is part of what education means for us, then we want to proceed to justify this connection on experiential grounds. We will want to say something about why this connection seems the most reasonable one to make and why it is most rational to base educational decision-making on this connection rather than others. This sort of justification cannot be gone into in detail here. Only a few brief points will be made. For example, one might argue from socio-political or economic perspectives, or from the simple reality that adequate levels of formal education are necessary for survival in today's world.

There are other areas of inquiry which might prove more fruitful, areas which fall in a natural way into the domain of educational discussion. For example, there appears to be, at times, a confusion between attempting

to decide upon a clear and concise description of a particular concept of education, and advocating such a description, once it is agreed upon, as an aim or aims in education. The point to be made concerning knowledge and understanding as an aim in education is that as an aim it is readily translatable into more specific objectives which are both realizable and testable. Part of what I have in mind here is, say, the teaching of subjects or parts of subjects where it can be said, "Our main objective is for students to acquire working knowledge of such-and-such material and concepts" where "such-and-such" refers to a part of some given body of knowledge such as arithmetic tables, quadratic equations, ~~the war~~ of 1812, or the plays of Shakespeare. The reason I make this point is because it seems to me that there are other notions which are advocated as practical aims in education which are not readily translatable in such a fashion. As already mentioned, it is the case that these notions have a 'second-order dependency' on the acquisition of knowledge and understanding in that either the meaning of such notions obviously assumes this dependency relationship or, the elucidation of such notions requires an appeal to other more basic types of knowledge and understanding. In the case of such things as 'commitment to the standards intrinsic to a discipline' it is plain that one needs first to be initiated into a discipline before questions of commitment could be addressed. In the case of other notions such as 'happiness' for example, or 'education of the whole man', I think it is fairly clear that no agreement exists concerning what constitutes a precise description of such things, and if such a description relevant to education were possible, it would very likely be through an appeal

to the types of knowledge and forms of understanding that we do now have. In other words, we would want the implementation of such an aim as 'happiness' or 'education of the whole man' to include other fundamental types of knowledge and understanding by which such aims could gain intelligibility. In fact, it seems to me that this is the only means by which this intelligibility could properly be gained.

Finally, it may be that such aims as the ones being criticized here are sometimes advocated because it is assumed that education is an all-pervading agent of change. It is debatable as to whether education in its present state can have such influences. I think we must realize that education as an enterprise or an institution is only one among many enterprises and institutions which can have a profound effect on the growth and perspectives of individuals that interact with them. This is another reason why I want to suggest that large and ambiguous aims such as 'education of the whole man', or 'happiness' cannot possibly, with any degree of thoroughness, be dealt with or even understood entirely within an educational framework. Happiness, for example, as an overall aim, should not and cannot be the direct responsibility of education. Now, it is <u>not</u> being suggested that such considerations are things that both those educating and those being educated should not be thinking seriously about. It is one thing to be concerned with getting students to think seriously about what might be entailed in concepts of a whole man. It is quite another issue to pose 'education of the whole man' as a practical aim. The latter approach is being criticized here. The former is surely an important and viable question, one which raises more specific issues related to

curriculum, and teaching and learning.

If such "large" considerations are to be taken seriously, and certainly they should be, then it will require some rather elaborate basis of knowledge and understanding by virtue of which such considerations can take on a "depth" in meaning and "breadth" in scope rather than being trivialized, forgotten, or pushed aside. Overall however, such aims are "tasks for living," they are goals properly placed within the context of the totality of living. The point is simply this. Philosophers of education do practicing teachers no favours by advocating far-reaching and sometimes "far-fetched" aims for implementation in teaching and learning. They provide a greater service for practitioners by aiding them in their primary task--to first and foremost provide a thorough basis of knowledge and understanding from which the larger task of living can proceed in the best ways possible.

So far, the acquisition of knowledge and understanding has been emphasized as a primary aim in education. This is generally in line with much of the writings in this area by philosophers of education. The point at which the position in this thesis begins to diverge from that outlined by writers such as Hirst and others is that, essentially, those positions are anxious to describe the logical aspects of teaching and learning in terms of the logical structure of forms of knowledge. It will be maintained here that the logical aspects of the structure of forms of knowledge are those very aspects which are not, and cannot be expressed in propositional form. If this position is at all reasonable, it will have fairly serious implications for teaching and learning. It will mean, among other things, that there could be an important aspect

of learning that is being either neglected or diminished in importance simply because of its ambiguity. Of course, we will need to get as clear as possible on what could be meant by "aspects not being expressed in propositional form," clear on whether it makes any sense to try to describe understanding in these terms, and, if a description is possible, clear on what can be said in relation to practical aspects of teaching and learning.

Understanding

The general purpose of the discussion in "Part One" of this investigation was to explicate, to some extent, the 'form' of understanding. In the "Introduction" I tried to suggest that the existence of such operations of understanding seems to be prerequisite for certain other kinds of knowledge. A restatement of the dilemma found there might be expressed in the following way. Cases of the analysis of, say, qualities such as 'red', 'rough', or 'square' would necessarily presuppose prior concepts to the objects of which the qualities are constituent parts. We do not recognize 'red' in isolation; some 'thing' must be red in order to recognize the quality.[1] Similarly, the recognition of objects, events, states of affairs, and so on, seems to presuppose some forms of knowledge or understanding on the basis of which those particular objects and things are conceptually differentiated from other things.[2] What mode of understanding accounts for this differentiation? The answer suggested was that such relations were accounted for by the 'form' of understanding. We now need to clarify this notion within the general context of understanding itself as an aim in education.

In order to discuss the notion of understanding in relation to

education we will need to re-examine a number of questions so as to determine whether anything more can be said about them. I want to try to do this in two ways. One way is to decide whether or not there is a distinction between knowledge and understanding that is useful for us to make within the context of this discussion. We can do this by recalling to our attention the question of whether or not there is a non-propositional aspect in understanding. If, indeed, we could reasonably show that an aspect of understanding could not be expressed in proposition form we would have a fairly strong basis upon which to draw a relevant distinction between knowledge and understanding. Secondly, we could ask whether or not there are alternate ways of clarifying the notion of understanding. The subsequent discussion is, in part, intended to show how we might begin to attempt this clarification.

Let us begin, then, by determining what we mean, in the context of educational discussions, by "understanding" and "knowledge." Clarification of the concept of knowledge is a task which is wide-ranging, and a task to which much of epistemology is devoted. It is not necessary for our purposes that we engage in extended inquiry concerning the term itself for ultimately, it is a certain concept of understanding that we are interested in. It is hoped that along the way, our notions of what knowledge is will be somewhat illuminated by the effect that the understanding is seen to have upon it. Suffice it to say that for the purposes of this discussion I am using the term 'knowledge' in a fairly straightforward and strict sense in that anything regarded as knowledge can, in some way or another, be expressed in propositional form. This type of description does not, of course, tell us anything about what is

knowledge and what is not, or about whether that which is regarded as knowledge is true or false, but rather, only that the term used refers to what can be expressed in statement form.

The problem which becomes immediately apparent in relation to the term 'understanding' is that most often (if not always) when we attempt to describe understanding or its operation, we are resigned to do this by reference to outcomes or manifestations of understanding. We ask the question "What conditions will be present when someone understands x?" In other words, we tend to look for something demonstrated or produced; we tend to make a judgment about understanding on the basis of manifested behavior or language, on the basis of something that can be recognized as explicit knowledge. We thus describe understanding in terms of knowledge. Indeed, no one would argue that this is a fairly reasonable basis on which to make such judgments. But could there be other ways to describe understanding?

To get a better view of what type of question this is, we might examine briefly an argument and analysis put forward by J.M. Moravcsik.[3] Moravcsik's position is that there is in fact a non-propositional component to understanding and this position is derived in part from an analysis of the structure of proofs and theories. Consider, then, the formal structure of a theory or proof along lines similar to Moravcsik's analysis: (1) an agent knows the premises of the argument, (2) an agent knows the various steps of the argument, (3) the agent knows certain rules which justify each step, (4) the agent knows the conclusion, (5) the agent knows how to produce the proof, and (6) the agent knows how to recognize and produce the proof in new circumstances.

This follows the general outline given by Moravcsik. It should be pointed out immediately that considering the entire context of Moravcsik's discussion, indeed, one finds a number of quite odd proposals. One such proposal seems to be that because some type of understanding is required even at the level of basic premises (step 1), or perhaps better put, because some understanding is prerequisite for basic premises, this understanding is of a non-propositional type. Another conclusion which appears to be based on this is that propositional knowledge is neither necessary nor sufficient for understanding. Although I am in general agreement with Moravcsik's conclusions concerning a non-propositional aspect of understanding, it seems to me that certain fundamental points are being missed. Perhaps this stems in part from the assumption that basic premises cannot be further reduced to even more fundamental propositions. On the contrary, is it not possible for basic premises to either be justified by some set of more general statements or reduced to a set of formal propositions? These, in turn, might be justified by or reduced to yet another set. It seems to be the case that even if basic premises of a theory or proof could be reduced to a set of fundamental propositions expressing, say, only 'logical form', one could still argue that this amounts to explicit knowledge in the form of statements. (Of course, one might insist that we will ultimately reach the point where no further justification is possible and we would simply have to accept a certain proposition or set of propositions as true by virtue of "agreement in judgment." This acceptance or "agreement" might, in turn, be argued for as a form of non-propositional understanding. However, it is not at all clear

as to whether Moravcsik had this sort of thing in mind.) Overall, this approach does not seem to provide the adequate explanation of a non-propositional aspect of understanding that we need. It seems to me, rather, that the first fundamental question, at least in the case of this analysis, turns not on whether there are necessary and sufficient conditions for understanding itself (although this will be a very important and intriguing question), but on the idea that some propositional knowledge is apparently necessary in order for us to make any kind of judgment at all about understanding.[4]

Let us take a second look at the structure of the proof just outlined. How can we relate the notion of understanding to a proof such as this? Consider the fact that the agent in question could memorize all the significant statements comprising the proof, that is, the premises, the steps, rules and conclusion, and even present or recite these in the proper order. Would we be inclined to say for certain that he or she understood the proof? I think not. But we might be much more inclined to conclude that someone did understand such-and-such if they were to fulfill the last step (step 6) of the proof, that is, if they were to somehow recognize or demonstrate a form of the proof in new or novel circumstances. Concurrently, we might be inclined to suspect that someone did not understand fully what was in question if they failed to do so. This condition, it seems to me, can be regarded as the "key" condition for judging the presence or absence of understanding of something. However, notice that even in this case, manifestations of understanding in new situations would necessarily be in the form of some action, behavior or language. This,

in turn, implies that the understanding in question can in one way or another, be expressed in statement form. The issue is even more straightforward than this. It appears, so far, that nothing meaningful at all can be said about whether something is understood if it cannot be expressed in some form by which it can be publicly judged. This means, of course, that all understanding of the kind we are discussing, if it is to be understanding, must be expressed in propositional form, otherwise any question about whether or not one understands is not really a question at all. At this point at least, there does not seem to be a significant difference between understanding and knowledge manifested in the form of statements.

The notion of judgment by public criteria and standards is a line of thought which now plays a prominent role in contemporary philosophy of education. It is, certainly, something that must be taken seriously but which can be, at the same time, misleading. It tends to discourage us from asking further questions about whether there are other possible ways of describing understanding. I want to leave aside for the moment public criteria and focus attention on what I suggested was the key condition for judgments about understanding, that is, recognition in new circumstances. It may be that further analysis of this condition will yield a relevant distinction between understanding and knowledge. If we can point to something that begins to look like a non-propositional aspect of understanding, we will have taken the first steps toward this relevant distinction. The type of question we need to ask about understanding, then, is, "What operations of understanding would be required in order to demonstrate a proof in new or novel situations?"

Understanding as Analysis and Integration

One becomes a bit suspicious about the element of futility which may exist in this exercise. In effect, one ends up trying to describe a non-propositional aspect of understanding in terms of propositions. It appears, at first glance, that what one is trying to prove is immediately refuted. Regardless of this, what we want to be concerned about is whether anything meaningful at all can be stated about an alleged non-propositional aspect. Can we, by virtue of statements alone, prove with any degree of certainty that we have managed to "grasp" the notion of a non-propositional aspect in understanding?

I think it can be said with some criticism that the idea of common understanding in "forms of life" stands in a rather convenient relationship to whatever is expressed in propositional form. An adherent of this thesis insists that anything in statement form is, ultimately, only understood against this "backdrop" of shared forms of life. Indeed, a position such as this seems to further imply that this common understanding is in fact the non-propositional aspect we are searching for, since it seems to be the case that all explicit statements ultimately acquire the intelligibility that they do have in relation to this understanding. In spite of this, I would like to make one last attempt to describe understanding in somewhat different words, and, as I mentioned earlier, the "key" to this description seems to me to be those operations whereby one is able to recognize or demonstrate a proof or theory in new circumstances.

Let us first examine whether or not there is anything useful to be gained from a comparison of the understanding of theories or proofs

with the understanding of objects and things in physical reality. Take, for example, the form of any simple physical object. The form of this object can be (and usually is) described by reference to component qualities or attributes. When asked of the thing, "What is its form?" we would tend to reply by saying something about various qualities that were apparent to us. In the case of, say, a red square block, we might make reference to its quality of 'squareness'. Further, we can manage to discuss, to a certain extent, the nature and significance of individual qualities, in the way that we could, say, discuss the quality 'red' or 'square'. There are here two points to note. First, of course, is the dilemma of prior knowledge already referred to. Knowledge of any particular quality "picked out" in such a fashion presupposes some understanding which provides a background by virtue of which the quality can, in the first place, be distinguished as such. Second, and related to this, is the fact that many other things could have been said about the object as well, things which we usually do not and possibly cannot know at the time. If we were particularly rigorous about description, we might, for example, have commented on the object's distance in space from us, on its density, volume, molecular structure, texture, and so on. The point is that it seems to be the case that entire knowledge of all constituent parts is not necessary for recognition of the form of a thing, even though it is constituent parts by virtue of which we come to understand the object. We can, and do in fact recognize an object without first knowing everything possible about all that goes to make it up. Take again, the example of a building. The form of a building can be described in terms of its component parts, but step by

step dissection of components is not necessary for, or in fact possible without recognition, first, of the general form of the building. We must, that is, recognize a building as a building.

Now is the case the same or similar with regard to theoretical understanding, that is, with regard to the understanding of theories or proofs? The discussion as so far outlined requires us to now make explicit a distinction which has already been implied between the recognition of things and objects, and a type of understanding associated with theories and proofs. Recognition, as previously described, is a notion which may be more appropriate when we are concerned with physical objects. It was pointed out that the recognition of things is possible without complete knowledge of constituent parts. But when we concern ourselves with the notion of understanding theories and proofs, I think we become concerned with a more comprehensive type of understanding. When we say of someone that they understand a theory or proof, and when this judgment is made on the basis of him or her being able to recognize or reproduce this proof in new circumstances, it seems to me that we are saying, in effect, that certain essential features have been fulfilled. Let me try to explain further what I mean by this.

The elucidation of this type of understanding may be aided by reference to a fairly simple analogy, one which should be, to some extent, familiar to most of us. The kind of understanding that I have in mind may be alluded to by pointing to instances in which it was not found. It could be expressed by saying that a lack of understanding would be very much like reading the individual sentences of a paragraph and never

grasping the overall meaning intended by the author. It might be possible to analyze the individual sentences and to some extent understand them (in a limited sense). That is, we might be able, at least with empirical statements, to analyze their meaning and verify their truth or falsity. However, this seems to me to be insufficient as an explanation for the type of understanding we are concerned with. There seems to be a condition which is missing, a condition required for the comprehension of the paragraph as a whole.

It might be argued that this case is not really much different from the notion of recognition of objects just discussed. It might be suggested that it is possible to recognize the overall meaning of a paragraph without detailed analysis and likewise, it is possible to recognize the general form of a theory or proof without detailed analysis of all significant component statements. Say, for example, that while "browsing" a sociology text we come across what we thought was an example of functional theory. We might then assert, "This looks like functional theory to me" and in fact on the face of it, it seems that we do this kind of thing quite often. But in assuming that this, in itself, provides an adequate explanation of the kind of understanding we are seeking, would be to ignore an important point which helps to illuminate the actual difference between recognition and understanding. What I mean by this is the fact that we would not be able to judge a given theory or proof as correct or incorrect, true or false, coherent or incoherent, without the fulfillment of at least two essential conditions: (1) we would need to 'analyze' all significant statements. Of course, there are many different methods of analysis. What I mean

here by analysis is explication of the meaning and truth of component parts of a theory, and, (2) we would need to comprehend the logic of their relations in the sense that we would require an 'integration' of propositions in order to "see" the theory or proof as a whole as being correct or incorrect. Although we may be able to recognize some things by 'form' without complete knowledge of components, we could not be said to understand, in the comprehensive sense intended here, a theory or proof without the fulfillment of these conditions. My contention then, is first, that we are most inclined to say that someone understands a theory or proof when it is demonstrated in new or novel situations, and second that this cannot be done unless the two conditions are fulfilled. In this way, understanding is defined in terms of those essential conditions which provide for its proper manifestation, those conditions, the absence of which would make impossible the manifestation of the type of understanding we are seeking. To put this another way, we attempt to describe understanding by trying to answer the question "How is it possible to recognize or demonstrate a proof or theory in new circumstances?"

Now it might still be argued at this point that although the notion of analysis (first condition) is relatively clear, what is not at all clear is the second condition, that is, the notion of integration. It might be suggested, for example, that there is really no such thing as 'integration' as a mental operation and that it merely amounts to something that is a result of analysis; that is, what we have been trying to describe as understanding is merely a function of analysis. What we would not want to do is mistake what has been said so far as implying some

sort of temporal priority such as, first--analysis, then--integration.[5] The problem, it seems to me, is that this type of argument insists that explanations of understanding must be given strictly in terms of analysis of statements. The concern in this discussion is that this is certainly not adequate, and perhaps even impossible. Consider, as a further reply, the following case. If one were to go about deciding whether or not a given theory or proof was true, correct, coherent and so on, and one attempted to do this by making judgments about a certain statement or set of statements, that is, if one attempted to do this through analysis of constituent parts, these judgments would, in turn, presuppose that one was able to see the proof or theory as a unified whole, as an integrated collection of statements. This would be, in fact, the basis upon which we were able, in the first place, to make such judgments. Now we are not so concerned here with merely the truth or falsity of individual statements so much as with the relevancy of statements. The meaning and truth of individual statements (empirical ones at least) can be determined by observation of states of affairs. What cannot be determined, per se, in the same manner is the relevancy or irrelevancy of this truth and meaning. Usually the statement 'Water freezes at $0^{\circ}C$' is true. However, experimental conditions could be set up, based on a theory, where the statement is shown to be false. What we tend to be concerned about in this type of case is not just that the statement is true or false, but why. That is, we are concerned with the relevancy of the truth or falsity of the statement determined by the context within which one finds the statement to be true or false.[6] Consider further that instead of a rule or step

internal to a proof or theory being false, it was determined that a basic premise was unsound. How could this be done? In the same way, it would presuppose to some degree an integrated view of the theory, otherwise we would not be able to make such a judgment about the premise as such. Our dilemma of knowledge mentioned earlier seems not to have been solved by reference to analysis alone.

The problem, it seems to me, in trying to describe this 'integrative' function is partly that we cannot very easily point to any particular 'thing' by virtue of which this condition of understanding is fulfilled. Analysis, as the term is used here, amounts to the analysis of statements. We cannot, however, manage to explain the integration of statements by reference to anything other than a certain operation of understanding which seems to be non-propositional in nature. Further, both conditions, analysis and integration, seem to be essential for the manifestation of understanding in new situations. It is this condition, in turn, by virtue of which we make judgments about understanding. This can be put another way which expresses our dilemma in more specific terms. <u>There is nothing, per se, in any collection of statements which guarantees comprehension of the logic of their relations</u> so that a given proof or theory can be seen as a unified whole and judged as such. Words and sentences spoken or on paper, do not, by themselves, amount to very much. They are, after all, only part of our physical environment in much the same way as other objects such as birds, rocks, entities, and things are part of it.

Initially, we had been anxious to clarify the idea of understanding as an aim in education in terms of the 'form' of understanding. We can

now reasonably argue for a distinction between explicit knowledge expressed in statements and a non-propositional aspect in understanding which seems to account for logical relations among statements and groups of statements. If the arguments provided are reasonable, then we are much closer to justifying serious consideration of the 'form' of understanding in education. The final task before us is to examine what implications this will have for teaching and learning.

CHAPTER V

TEACHING AND LEARNING

Domains of Knowledge and the 'Form' of Understanding

In the previous chapter an attempt was made to elucidate a certain concept of understanding in relation to education. Also, a specific objective for the practicing teacher, the development of understanding in the individual learner, was advocated on the basis of this elucidation. The purpose of this chapter is to make some attempt to address more practical problems of teaching and learning in light of what has already been said about understanding. In order to do this, we will need to examine the work of P.H. Hirst, since it is the case that his work has rather direct implications for curriculum issues, and thus for issues associated with teaching and learning. It is through his approach to questions concerning the structure of knowledge that we may be better able to describe understanding as a practical objective.

When Hirst's argument for the pursuit of knowledge is closely examined, one finds, I think, problems similar in nature to those found in Peters' concept of education. In other words, in showing that the pursuit of knowledge is self-justifying, or rather, that we cannot ask for justification of knowledge without presupposing commitment to it, we demonstrate simply that fact and not that there is a connection of a necessary kind between this pursuit and the use of a given term or terms. Put straightforwardly, when we look and observe, we may indeed find that different groups of people mean quite different things by the use of the

term 'liberal education'. I am not, however, primarily concerned to make this criticism against Hirst. I am much more concerned with the connections between the acquisition of knowledge and the structure of mind, and indeed the concept of mind that surely must be implicit in Hirst's theory.

Now it seems to me that there are certain basic philosophical premises upon which Hirst develops his 'forms of knowledge' thesis. These premises seem to imply a certain concept of mind which, no doubt, has had far-reaching implications for practical educational problems concerning curriculum, content, methods, and the like. We need to be concerned about these implications, therefore, without going into great detail an examination of these premises is warranted, although one hopes that the brevity of the examination is not taken as a trivialization or "watering down" in any way of what is, essentially, a quite complicated and seriously thought out position. I want to try to show that the relations implied in these premises are in fact suspect, and that in at least one case that can be pointed out, indeed one that Hirst himself refers to, the concept of mind implied does not seem to make much sense.

The first basic premise, then, seems to be the idea that nothing at all intelligible can be said or maintained about anything without reference to some explicit set of statements or propositions which are grounded in public forms of understanding. This idea might be better expressed by saying that public criteria and standards, that form of shared understanding by which things are judged, are in fact the basis upon which the entire spectrum of our experience and knowledge is articulated and made intelligible. I think, in one sense, this is

generally correct, but we need to be concerned about where this line of thought leads. Note the following statement by Hirst: "I regard it as a basic philosophical truth about the nature of knowledge that, whether we like it or not, all knowledge is differentiated into a limited number of logically distinct forms or disciplines."[1] On what basis would Hirst make such a claim? Put another way, we need to know in more exact terms what he means by "basic philosophical truth." Is he suggesting that human knowledge is, as a matter of fact, divided up into various domains, and that we had better just accept this as "the way things are"? If this is indeed what he means I should think we would be somewhat disappointed. In any case, it seems to me that if he intends for us to accept "the way things are" this goes a long way towards showing us not that the divisions of knowledge are a basic philosophical truth but rather that this is merely a matter of contingent fact. That is, the divisions of knowledge as contingent seems to be the proper philosophical response to someone who suggests that things are such-and-such a way because they just are, i.e., we merely observe that things seem to be a certain way. But perhaps he does not mean this. Perhaps he means instead that knowledge is differentiated into distinct forms <u>because</u> this is in fact the way the mind is structured or organized. The mind has, so to speak, organized human knowledge and experience on the basis of its own inherent structure. Again, the following assertions by Hirst may give us some further clues: " . . . , the development of mind has been marked by the progressive differentiation in human consciousness of some seven or eight distinguishable cognitive structures, each of which involves the making of a distinctive form of reasoned judgment . . . "[2]

and, "It is rather that to have a mind basically involves coming to have experience articulated by means of various conceptual schemata."[3] One could easily opt for this second explanation of what Hirst means by "basic philosophical truth" because it seems to be the most obvious means by which he could reach the important conclusion that "the achievement of knowledge is necessarily the development of mind." (Italics mine.) But then, how is it that Hirst can make such claims about the development of mind? It seems to me that the only possible way he could do this would be by reference to the observed differentiation of knowledge into distinct forms or disciplines. Any description of the structure of mind would have to be, if we are to remain true to Hirst's basic premise, in terms of public forms of understanding. He is, in effect, saying that the mind is organized in such-and-such a way because this is, in fact, how we find human knowledge and experience to be structured and organized.

Hirst seems to think that because of the fundamental problem of intelligibility being based on public standards, we must necessarily resign ourselves to describing the development and structure of mind entirely on the basis of the observed structure of explicit knowledge. He seems to want to suggest, and this appears to me to be a matter of contingent fact, that because human knowledge has been organized in certain ways as "domains" of knowledge that this necessarily constitutes the structure of the mind; that because public forms of understanding form the basis of our judgments, the organization of these public modes must in fact represent the nature and organization of the mind. He is, in essence, defining the development of mind in terms of the differentiation

of knowledge and this differentiation, in turn, on the basis of the structure of mind. We need to ask ourselves then, whether this can be regarded as an adequate explanation of either the development of mind or the organization of knowledge. Although somewhat plausible, I think there is still room for some skepticism with regard to the view elaborated by Hirst due to the suspiciously circular conception of mind upon which it is based. This can be put another way. When one sets out to assert that A and B are the same or similar in nature, it supposes, to some extent at least, that one has the means by which the characteristics of each can be examined. But in the case of the domains of knowledge, the public criteria and forms of understanding which are to be assessed are the only means by which assessment can take place according to Hirst (although he might reply that the forms of knowledge thesis does not preclude the assessment of one set of criteria by another set of criteria). In the case of the development of mind, as Donald Davidson has tried to point out, anything said about the nature of conceptual schemes is "infected" by the limitations of the conceptual scheme used in description (although in the chapter on "Conceptual Schemes" I pointed out counter-examples which address more directly positions such as Davidson's).

However, perhaps Hirst does not mean this kind of thing either. Perhaps we have so far been mistaken as to what Hirst means when he regards the differentiation of knowledge into logically distinct forms as a basic philosophical truth. Perhaps what Hirst intended to mean was the logical distinctions could be observed within the structure of the forms of knowledge themselves. What we have said so far has been

quite general. What we need to do now is to examine some implications of this particular line of thought on a more practical level, and indeed, I think we can detect "traces" of this line of thought which have rather far-reaching implications for teaching and learning. For example, with regard to the teaching of deduction as an intellectual skill Hirst states, "To teach children to deduce is not to teach them to think along particular psychological channels, it is to teach them, . . . to produce certain patterns of statements in the end."[4] Now it seems to me immediately that in education this is, with the exception of special cases, the type of thing that we generally want to avoid. In simple terms, the recitation or other public performance of "patterns of statements" does not, in itself, constitute understanding in the sense in which it interests us here. If this were not the case, note that the criteria for the successful teaching of deduction could be fulfilled by a five year old child. For example, a five year old child could be trained to recite the proper sequence of, say, a mathematical equation or a syllogism. Does this mean that the child has acquired the skill of logical deduction or that he or she understands what deduction is? Hirst wants to insist that the forms of knowledge expressed as modes of thought constitute forms of judgment which are distinct in logical character. The forms of knowledge thus represent what amounts to differentiated structures of reasoning and rational understanding with distinct forms of justification. Hirst wants to make understanding intimately dependent on content expressed in the form of the domains of knowledge. Again, this may be another reason why he can equate the development of mind with the achievement of the

different forms of knowledge.

However, it seems to me that we are able to recognize the 'form' of, say, deductive reasoning (to stay with Hirst's own example) independently of any particular content with which it is associated. That is to say that in a given mathematical equation such as '2 + 3 + 4 = 9' or in the syllogism "All bachelors are unmarried, John is a bachelor, Therefore, John is unmarried' or in any case where C is deduced from A and B, we do not conclude that the logical reasoning in one case is something entirely different from that which occurs in the next. If we were inclined to do so, a number of unfortunate conditions would adhere. If we were to adopt Hirst's point of view, that is, if we were to regard the achievement of the forms of knowledge as the acquisition of distinct forms of reasoning, first, it seems to me that this would be very much like saying that there are in fact a given set of statements based on one kind of logic that we regard as true, and another set of statements based on another type of logic that we also regard as true, and so on. Second, as a result of this, the term "logical deduction" would refer to no specific outcome, or at least the term would not refer to a specific kind of outcome based on rather specific operations. But again, this does not seem to be the case for we do in fact recognize a deduction irrespective of the content with which it is concerned. That is, it seems very reasonable for us to say in science, mathematics, history or philosophy that such-and-such is an example of deductive reasoning. There is another point that can be made. If we can accept the fact that the 'form' of deductive reasoning can be recognized independently of content I think that we

can also be fairly sure that there are limits to the types of mental operations involved in such reasonings. In other words, it is not the case that we think about anything at all or think in any way at all when it is said that we are able to deduce such-and-such. Now granted, something in the way of specific content is necessary so that if we are involved in mathematical deductions we are not in fact contemplating historical geography or what we plan to do on our summer holidays. But likewise, logical deduction would also require that we contemplate given content in rather specific sorts of ways. If, for example, we were concerned to deduce, on the basis of a given set of statements, it would require that we not think in any way at all about the statements, or, in other words, it seems to me that we would not achieve the desired end by fantasizing or day-dreaming, or by perceiving the statements poetically from the point of view of rhyme or alliteration. It would require, rather, that we be concerned about meaning, and, it would require that we direct our attention, so to speak, to the 'logical relations' which adhere among the statements concerned. It surely must be the case that this would be required for the recognition or demonstration of deduction in new circumstances.

Hirst wants deduction to be the achievement of certain "public performances." My contention is that this is not adequate as an explanation of the understanding of deduction and further, that the distinction between verification by means of public criteria and the account of understanding given here is an important distinction for educational reasons. It seems to be the case that we are in fact able to recognize the 'form' of certain kinds of understanding, deduction in this case,

and this I think, points to some sort of "commonality" in the operation of understanding. We can state this in Hirstian terms. Given that the 'form' of deductive reasoning can be recognized as described here, in order for agreement to be reached as to what constitutes public criteria and standards for something being a logical deduction, it assumes in the first place some basis upon which agreement could be reached by those involved, some basis upon which deductive reasoning can be recognized as distinct from other forms of reasoning. Logical deductions are not random configurations of statements or propositions. When we ask the question of Hirst, "What provides for the recognition of this configuration as opposed to others?" no adequate answer seems to be provided.

Teaching and Learning

When we ask questions about how a subject is to be taught, these questions very quickly lead to questions about how a subject is learned. In order to discern what constitutes good teaching methods, or the methods one will want to implement, we will, most naturally, turn to observation of how successful they are in bringing about the desired learning. What is involved in teaching a subject should, then, be intimately related to what is involved in learning a subject. Hirst has maintained that bodies of knowledge exhibit logically necessary features, and questions about teaching a body of knowledge are, in part, questions about adherence to these logically necessary features. That is, it is presumed, and indeed it does seem reasonable to presume, that the teaching of any subject should to some degree be consistent with the logical features of the subject itself. Hirst refers to the problem as

being one of adherence to the "rules of logical order" implicit in a subject. He makes a further distinction between two levels of logical order expressed as logical relations. One distinction is referred to as "logical grammar" and means, in effect, the network of relations between the concepts by virtue of which propositions are formulated. This amounts to, roughly, adherence to rules for the correct use of terms, without which a given discipline cannot be understood. In this sense, science or history has a certain logical grammar. But disciplines of this kind would also have a "logical sequence of validated propositions" in terms of which theory and explanation can be elaborated. Here, what Hirst seems to have in mind are more fundamental propositions and truths upon which various disciplines are built. In this sense, explanations for true and false statements within a discipline would, in turn, be given by reference to more basic propositions, which in turn, might be founded on statements more fundamental to the intelligibility of the discipline, and so on.

Nonetheless, Hirst's contention is, briefly, that this logical sequence does not dictate any temporal sequence for the teaching of statements and truths within the discipline. The logical sequence of a discipline is something that is "pieced together" as one deepens one's understanding of that discipline. However, in the case of a discipline's logical grammar, Hirst maintains that this implies a procedural principle for the teacher of a discipline, without which that discipline is not properly understood. Thus, it seems to follow that some logical order should be maintained as far as the grammar of a discipline is concerned,

if for no other reason than the fact that the learning of certain concepts logically necessitates the prior learning of other concepts, although, Hirst suggests, some disciplines will manifest a more strict logical order than others, thus requiring a more strict adherence to logical grammar in the teaching procedure.[5]

Now this seems to me to be a fairly acceptable attempt to explain the logical structure of domains of knowledge and the implications of this for teaching. There are however a number of small points which might be made which will serve to cast some degree of doubt on the types of distinctions maintained by Hirst. First, I think there is a sense in which logical grammar, given that we accept the distinction for the moment at least, tends to be deceiving. Clearly there are cases where we would not want to discuss some concepts before discussing others. In music, for example, students may not adequately comprehend voice-leading without first knowing something about inversions of chords, and likewise, we could not, say, discuss the concept of harmony in any depth (or melody for that matter) without students knowing anything about interval relationships. In these cases, more advanced musical concepts are dependent upon an understanding of more basic rudiments of music. But we should not, it seems to me, either construe logical grammar to imply a dictation of strict temporal sequence, or, assume that the understanding of a thing means, in fact, an understanding of all its constituent parts. There may, indeed, be cases where discussion of concepts of harmony serve to "deepen" one's understanding of intervals. One may come to "see" intervals working in harmonic movement. One could also argue that in the case of science, where a definition of a molecule,

say, is given in terms of atoms, one would normally presume that understanding of molecules could not be fully achieved without an understanding of atoms. But this does not necessarily require that one teach atoms before one teaches molecules. This would depend upon the logical order found to be most valuable for different groups of students at different times. (Empirical studies might be helpful here.) It might be found, for example, that the concept of an atom can be introduced effectively through the concept of a molecule. If the understanding of a 'thing' required knowledge of all its component parts it would mean that the understanding of a molecule required a detailed understanding of the components of the atoms of which it is comprised. But it seems to me that a good deal of discussion of science can go on in schools without the detailed knowledge possessed by scientists. If we were to adhere to the principle of logical grammar we might argue, for example, that the concept of 'number' is logically prior to the learning of arithmetic tables. However, children do learn addition and subtraction tables, equations such as '2 + 2 = 4', without prior abstract knowledge of concepts such as 'number' or 'equivalency'. Of course, Hirst could conceivably reply that these are problems of logical sequence and not logical grammar, and as such are irrelevant to the problem of temporal sequence.

This brings us to our second criticism. It can be briefly stated by asking whether there is, in fact, an actual distinction worth making between logical grammar and logical sequence. It might be argued that no such distinction exists. Hirst has characterized logical grammar as those relations between concepts by which meaningful propositions

are formed, while logical sequence refers to those relations between propositions which allow for explanation and proof in a given discipline. But surely one could quite easily argue that in any given set of fundamental propositions used for explanation one will also find various important concepts. To the extent that these concepts present problems of logical grammar, there will also necessarily be problems of logical sequence. Hirst has suggested that the logical sequence of fundamental propositions does not, in fact, dictate any temporal sequence. But it seems to me that we would not want to introduce certain basic propositions where there were discrepancies in logical grammar, that is, we would not want to introduce propositions, theories, or proofs containing concepts for which other concepts not yet learned were prerequisite. In other words, in these cases problems of so-called logical grammar generate problems of temporal sequence with regard to fundamental propositions.[6] What makes this distinction more questionable in the first place is the fact that any definition or explanation of concepts that can be given requires statement form. It might be the case that certain concepts are so essential in explanation in a given discipline that the propositions by which they are stated are, in essence, fundamental to that discipline and thus are understood in terms of logical sequence. Does this then <u>not</u> make them problems of grammar? The point is that we need to know a great deal more about how given statements could, in the first place, be differentiated in terms of logical grammar or logical sequence.

This raises an even more serious problem. If it can be accepted that sets of propositions which are fundamental to explanation and

proof also contain important concepts, concepts in terms of which the propositions can be meaningfully stated and concepts which are important for the learning of the subject, then what Hirst is saying about grammar in relation to sequence appears to be somewhat contradictory. He would be saying of such statements that in terms of logical sequence no temporal sequence is dictated, while at the same time in terms of logical grammar, that is, relations between important concepts contained in the propositions, theories or proofs, problems of logical ordering do in fact exist. For example, take the statement "In any cycle of fifths chord progression, the seventh of the first chord resolves to the third of the following chord." As straightforward as this statement may seem, it is, in effect, a fundamental principle of harmonic movement in tonal music. Clearly, there are problems of logical grammar. But does this not also create problems of temporal sequence with regard to the statement itself? Even Hirst would agree, it seems to me, that such a principle could not be introduced at just any point in the development of musical knowledge and surely it is a principle which could be reintroduced at various points to facilitate a deeper meaning of the concepts involved. Can we draw exact distinctions between concepts which are stated in proposition form and propositions within which concepts form a constituent part? The answer would seem to be in the negative.

Critical Questioning

It was not the original intention of this discussion to provide anything in the way of specific prescriptions for teaching and learning practices, however, there is one additional factor which seems to me

to be so central to the concept of understanding that it warrants at least some further explanation. In the previous chapter, I had argued for a non-propositional aspect of understanding on the basis of the condition essential for recognizing understanding, i.e., demonstration of that understanding in new situations. In turn, two conditions, analysis and integration, had been pointed out as necessary for this taking place. We now need to attempt to describe a factor on the experiential level which is important in the development of understanding. I will call this factor "critical questioning." It was stated earlier that the primary objective of the practicing teacher is to "enliven and develop the understanding of the individual learner." I will, in effect, now try to explain what is really meant by this.

It is possible that the suggestions in this thesis could in fact be adopted and yet the teaching and learning process would, in spite of this, amount to little more than a sophisticated form of training (not to suggest that there is anything wrong with this under certain conditions). That is, we might decide that in order to develop the kind of understanding with which we are concerned here, what we should do is essentially exercise the students' abilities to analyze and synthesize. In a case such as this, what we might tend to get as a result is very efficient analyzers and synthesizers, who may, to a certain extent, be able to proceed to demonstrate certain proofs and explanations in new situations. But is this enough?

As a preliminary to what needs to be discussed here, it may be helpful to compare the concept of understanding thus far described with what Gilbert Ryle says about the difference between 'teaching that' and

'teaching how to'.[7] There are, it seems to me, subtle similarities which may help to elucidate the concept of understanding. Ryle suggests that we do not properly feel that education has taken place until at some point in the acquisition of knowledge the learner is capable of taking his own steps, that is, self-motivated action, toward his own self-learning of new material. Ryle elaborates on this distinction by suggesting that a great deal of subsequent learning depends for its achievement on previous forms of simple rote training or repetition, which amounts to the instilling of basic but necessary skills. He stresses that this is even the case in disciplines such as philosophy. But sooner or later, according to Ryle, we want the student to take his own initiative. What seems to be implied here is the transfer of basic skills and the development of more complex forms of knowledge and understanding. It is the culmination of the teacher's task to bring about such a state of self-motivated acquisition of knowledge. Central to Ryle's position is the notion of the learning of certain methods, certain approaches or 'modi operandi' that one acquires in relation to various domains or disciplines and which one brings to new problems or situations. Learning 'how to' involves, to a significant extent, being initiated into various 'modi operandi'. In Ryle's terms, new problems are solved, new ideas expressed when, by self-motivated means, one brings to those situations one's acquired 'methods' of understanding, thus expanding the scope of one's knowledge and abilities. In terms expressed here, one demonstrates understanding of something by recognizing or demonstrating the 'form' of that understanding in new applications.

It might still be argued, then, that the explanation of understanding

so far given is not entirely adequate. What do we do, for example, about Gilbert Ryle's insistence on the self-motivated learning of the student as an objective of the teacher? Indeed, it seems to me that agreement could easily be reached among educators that this is in fact the goal of good education. Surely it is the case that at least ultimately, we want students to take their own initiative in the inquiry process. How do we address the problem of self-motivation? I think the answer to this, or at least a partial answer, can be given by directing attention toward certain 'experiential' aspects of teaching and learning. This, to a certain extent, is my criticism of much philosophical and other theoretical work in education. It seems, in the case of philosophy of education at least, that no matter how close we think we are getting to the practical problems of education, the theorizing, in spite of this, tends to remain "aloof" or detached from the relevant practical issues. I want to suggest that a partial solution to this problem may be achieved by attempting to say something about the actual experience of teaching and learning.

Now we might describe this desired state of self-motivated inquiry, roughly, as some sort of combination of inspiration and curiosity. My intent here is not to provide any psychological definitions of or explanations for inspiration and curiosity, but rather it is an attempt to give a sort of rough "sense" of what we might describe in actual experience as self-motivated inquiry. Certainly other theorists could provide other terms which would be equally as helpful. When we say, then, that someone is self-motivated to do something we might also say that that person is inspired to do that thing. And further, for one to

inquire into something, assumes, in the first place that one's curiosity has been raised in regard to that thing. But more important than all this is the fact that when Ryle, for example, discusses self-motivated learning, ultimately what is being referred to is the kind of motivation that is fundamentally intrinsic. All action is, in a way, self-motivated. It is possible, it seems to me, to regard most actions that are not involuntary or reflexive as being self-motivated in the sense that they are one's own actions, regardless of whether factors involved in motivation are of an instrumental or non-instrumental kind. It is not necessary here to elaborate on the nature of intrinsic value. This was attempted in chapter three. Suffice it to say that what Ryle seems to mean by self-motivated learning is that type of motivation which is inspired by the intrinsic value of the pursuit itself.[8] The important point to be made is that self-motivated learning must, it seems to me, be dependent on some form of experience of the intrinsic value of learning. The self-motivated pursuit of learning assumes that one is, in fact, aware of the value of what is being pursued. This awareness, in turn, must have an experiential base. What I mean by this is that the pursuit of learning for its own sake presupposes <u>experience</u> of the value of learning itself, otherwise the awareness of the value of such a pursuit would not be possible. Even if one were interested in 'X', one would not consider that that interest would be further satisfied by undertaking learning about 'X' unless one already had significant experience of the value of learning in relation to items of intrinsic interest, giving the general sense of the potential value of learning <u>per se</u>. One who pursues learning for the sake of social or monetary gain alone, that is, one who pursues learning as a means to

extrinsic ends rather than for the process of learning and special understanding gained, need not directly experience the value of these ends in order to believe in their value sufficiently to pursue them. This does not seem to be the case as far as self-motivated inquiry is concerned.

What type of experience, then, would provide this awareness of the value of learning? Herein lies the key to a missing ingredient in our discussion of teaching and learning. Students must be put in the way of penetrating ideas which will provide a feeling for the "spirit" of inquiry, ideas which touch on what they see as important to them. It is not enough, then, to provide demonstration and exercise in analysis and integration. Students need to be given the opportunity for those experiences which provide the appropriate "seed" for the growth of self-motivated inquiry, and thus for the growth of understanding. Students must be "stopped in their tracks" by the power of penetrating ideas. There is no easy way to describe these experiences. What we are concerned with is something that occurs on the experiential level of teaching and learning. It is something that might be observed in terms of changes in facial expressions, bodily movements, change in attitudes, beliefs, behaviors, and perspectives on the part of students, and it will be something that is remembered as a special event in their own series of experiences. Perhaps better put in Jacob Needleman's terms, students need to be faced with the task of "critical self-questioning."[9] If it is the case that the desirable end of self-motivated learning means, in essence, certain changes in behavior, attitudes, or perspectives, then students will have to be put in the way of those ideas which can provide

the opportunity for critical self-questioning of behaviors, attitudes, perspectives, and so on. That is, the ideas must be felt to throw into question some fundamental aspect of the meaning of their own lives. Now it seems to me that what critical self-questioning amounts to, in effect, is critical examination of one's own knowing, for if we are genuinely interested in the knowledge and understanding of the learner, then, surely, we need to be interested in his or her knowledge and understanding, and this cannot be knowledge as expressed entirely in terms of publicly accepted sets of propositions, not if it is to be regarded as the knowledge and understanding of the individual learner by that learner. Indeed, on the experiential level of teaching and learning, it is exactly this that we need to effect if we are to bring about self-motivated inquiry in any real sense. It was my intention to imply this kind of notion when it was stated that the primary objective of the practicing teacher was to "enliven and develop the understanding of the individual learner."

The purpose of the previous discussions has not been to negate the value of Hirst's analysis of the logical structure of knowledge, but only to point out those areas where certain ambiguities exist and certain areas where I find it necessary to develop alternative points of view. Hirst has emphasized explicit domains of knowledge and the distinct 'forms of thought' which they embody. If in fact certain forms of thought are conspicuously characteristic of certain disciplines then one of the tasks of the educator is to provide for the facilitation of these forms of thought along with habits of mind and other articulations

which accompany them. It follows from this, therefore, that the teacher should have not only a working acquaintance with the various levels of content of a discipline, but also a knowledge of the logical anatomy of the forms of thought which are endemic to that discipline. As a teacher, depending on the level of students, one would, explicitly or implicitly, be interested in imparting more or less of this logical anatomy. The point being made here is that whatever the nature of the structure of forms of thought or forms of knowledge, understanding of this logical structure is, in part, a philosophical task, and is therefore a mode of philosophical understanding. This, in itself, is I think, a fairly strong reason for justifying philosophical inquiry in teacher education.

There are other ways to view this issue. What is it that teachers are doing when they are actually teaching? The philosophical position being advocated here is expressly not one which stresses the mere transmission of information. That is, it is not one based solely on a conception of mind where the acquisition of knowledge amounts to the passive accumulation of bits and pieces of furniture, where the development of understanding means that more furniture has been accumulated. It seems to me quite clear that we want more to be happening in education than this. Based on the previous discussion, a significant part of learning involves the acquisition of concepts and the development of abstract logical relations. This, it seems to me, is a necessary part of what understanding means. If the development of this type of understanding is being viewed as a realistic aim in education, then it seems to follow from this that teachers should be expected to acquire knowledge and

experience concerning the nature of this understanding and the facilitation of it in learners. Further, philosophers and other educators need to consider that this kind of thing must be brought to the experiential level of teaching and learning. Previously, the notion of critical questioning was introduced as one possible educational approach by which students could be put in the way of those questioning experiences which are seen as essential for developing a self-motivated inquiring attitude. If these experiences are regarded as valuable aspects of learning, then surely we will want teachers to have some acquaintance with these experiences and the logic of the subject matter in relation to which these experiences can be brought about. In other words, it would be foolish for teachers to be attempting to encourage the development of something about which they have no adequate knowledge and experience.

There has been a good deal of emphasis lately on the practical aspects of teacher education. Roughly put, there are those who might say that good teacher education consists in the learning of one's subject area, the learning of various teaching methodologies, and behavioral studies with an emphasis on relevant practice in the field. And of course, in one sense they are correct in that we always want to maintain a proper balance of theory with practical considerations. The acquisition of skills and aptitudes in teaching comes partly through practice of those skills and aptitudes. As Gilbert Ryle so aptly put it when referring to learning 'how to', " . . . he learns the ropes, not much by gazing at them or hearing about them, but by trying to climb them . . ."[10] On the other hand, it would be unwise to allow important

theoretical aspects to be overshadowed by mere practical considerations. Entire focus on theoretical aspects runs the risk of becoming irrelevant, purely "academic" for any given practitioner, while emphasis on specific unreflective patterns of action runs the risk of becoming educationally redundant. It is practice without insight as to fundamental purpose. I think this applies to everything from fencing to philosophy. The premise being argued for here is simply this: an important part of learning involves the acquisition of abstract concepts and relations, therefore part of teaching will require an analysis and manipulation of the structure of such concepts and relations, and this, it seems to me, if pursued to adequate depth will necessarily involve a philosophic aspect to inquiry. A good teacher must be able to deal competently with abstract forms of thought, even at the level of philosophic generality, since this is essentially what he or she is expecting at some point from students. It is also required for judging what is and is not to be considered as really educational. Here is a point, it seems to me, that needs to be taken far more seriously in teacher education.

CHAPTER VI

CONCLUSION

In order to present in concise form the main concluding points I think it worthwhile to modify the mode of inquiry used. Thus, the following conclusion is presented as a dialogue between myself and a practicing teacher, and is intended to concisely unify some of the main lines of thought in the thesis, while at the same time pointing out significant practical implications for curriculum and teaching. I would emphasize that the dialogue presupposes a careful reading of the previous chapters.

I

TEACHER: I have read your thesis and we have been casually discussing certain points. I must admit that I do not really understand what you are trying to say. What in the world do you mean by a 'form' of understanding and how is the clarification of such a thing going to help me? My "hunch" is that even if we could reach a clarification on this, we would still be at a loss in translating your philosophy into terms which are practical and relevant for teaching. In other words, does your philosophy of education make any practical difference? That's really what I am interested in.

ME: Well, so am I, but first, you have asked two questions. One concerns the 'form' of understanding and the other concerns its relevance in teaching. I think it would be wise for us to examine these one at a time.

If we are not clear on the first, we certainly will not be able to discuss the second.

TEACHER: So you are going to start with the 'form' of understanding?

ME: Rather than jumping right in, we can set the stage by reviewing one or two prior questions.

TEACHER: Like what?

ME: Recall that I began the discussion in the thesis with what is, essentially, a "form-content" problem, the problem of a valid distinction between what is formal and what is substantive in understanding. This problem was dealt with in a number of different contexts; a discussion of perception, conceptual schemes, the distinction between language and thought, and so on. However, the form-content problem is also very much an educational problem, and it was within this context that the question initially arose and motivated the inquiry.

TEACHER: How is it an educational problem?

ME: My point of view is simply that the emphasis in education has been predominantly on content, that is, the body of knowledge in subjects--the teaching of content, and I am interested in examining and emphasizing the other side of the relationship, the 'form' of understanding.

TEACHER: You realize of course that the notion of form without content is completely impotent, it is essentially vacuous.

ME: I would agree, but this does not refute my own point of view.

TEACHER: I do not understand why not.

ME: If we assume for the moment that it is correct to assert the form-content distinction, does it not also follow that content without form is not sensible and perhaps not even possible? If we suggest that it

is sensible, then we have no account of the meaningful organization of content. Could it be said, then, that both form and content are equally important in education?

TEACHER: If you put it like that I can agree, for the moment at least.

ME: Then here is the educational problem; the emphasis has been on content to the neglect of 'form'.

TEACHER: Alright, then prove to me that the distinction you have drawn between form and content is correct.

ME: Well, you may have to re-read the thesis. However, what I may be able to do is summarize the line of reasoning that was provided for such a proof.

TEACHER: Please do.

ME: I think the problem initially stems from an ambiguity in the notion of a concept itself. Recall that in the first chapter on "Conceptual Schemes" I argued that from Davidson's discussion we cannot be certain as to what he regards a concept to be.

TEACHER: I don't follow you.

ME: There is a conflict in our understanding of concepts between regarding them as some sort of entity "possessed" by the mind and regarding them as part of the public domain.

TEACHER: Which do you choose?

ME: Well, strictly speaking, neither. An exact ontological classification of a concept is something that I have not claimed to provide in the thesis, and it was even implied that such a thing may not be possible.

TEACHER: Wait a minute. If you can't tell me anything about concepts, how are you going to tell me anything about the form-content distinction?

ME: I did not suggest that nothing at all could be said about concepts. I am not as interested in what a concept is, as in what can logically be said about it.

TEACHER: And what can be said about a concept?

ME: Whatever else can be said regarding concepts, one thing seems certain: any concept whatsoever is only intelligible by virtue of the statements which express it. Would you agree?

TEACHER: I suppose I would have to agree. But does this not amount to a very different account of concepts from those that implicitly construe concepts as part of some mental scheme?

ME: Indeed, it does. In effect, it shows us that concepts can be identified or discerned one from another on the basis of statements which express them, does it not?

TEACHER: It would seem so. However, is it not possible to conceive of something and not be able to express it?

ME: I'm sure it is, but I think this may be a matter of confusing thoughts and ideas, whatever they may be, with concepts. Do you recall what I said in the first chapter? When a concept X becomes intelligible, and given adequate language ability, it can be expressed in the form "X is A, B, C, D, . . . " To say that X is intelligible means, essentially, that it can be expressed in language that is agreed upon. If this is the case, do you notice that something else can also be said about concepts?

TEACHER: What is that?

ME: If they are intelligible by virtue of statements then it seems to follow that concepts cannot be non-substantive.

TEACHER: I do not understand.

ME: Do you agree that concepts must have content? Otherwise, how could they be identified as such? How would they be expressed?

TEACHER: Well,....

ME: Let me put this another way. I think we can easily agree that concepts must have meaning. If not, they would provide no form of communication. If they have meaning, then they are about something. Would you agree?

TEACHER: Yes, it seems to be the case. But I do not see the point you are trying to make.

ME: Whether we are concerned with those philosophical positions which want a very close equivalence between language and conceptual schemes, or with those that do not, my criticism of all such accounts is that they do not manage to address questions of the type, "What distinguishes and organizes content?" "What provides for the integration of groups of statements and at the same time provides logical relations which make one group distinct from another?" I am interested in logical relations between concepts and groups of concepts.

TEACHER: Well, I'm not sure I agree, but I am beginning to see what you mean.

ME: Let me now refer you to Chapter IV and the proof I tried to provide for a non-propositional aspect in understanding. I think we will see that this is the other step in showing the truth of the notion of 'form' of understanding.

TEACHER: Fine. So far I fail to see it.

ME: Remember that I tried to show that any understanding of groups of statements in terms of analysis alone is inadequate as an explanation because the analysis itself presupposes an integrative capacity of

understanding?

TEACHER: But can we not understand statements just through analysis?

ME: What do you really mean when you use the term 'analysis'? Strictly speaking, to show that this cannot be the case we need merely to stress that statements, concepts, propositions, and so on, cannot acquire meaning and relevancy in isolation. This is achieved by being part of systems of concepts. The question is, "How, in turn, is this possible?" Even simple statements such as 'Water freezes at 0°C' presuppose a great deal of knowledge.

TEACHER: Yes, I would have to agree.

ME: This is why I dealt with groups of statements, that is, theories or proofs, because dealing with the problem in this way gives insight into the non-propositional aspect of understanding.

TEACHER: I still don't clearly see your point about a non-propositional aspect.

ME: I wanted to show that there must be a mode of understanding by which content, in this case statements, groups of statements, propositions, and so on, is distinguished and integrated, and that this mode of understanding is non-propositional because it is that by which propositions, statements, and groups of statements are logically related.

TEACHER: Yes?

ME: If it is non-propositional, then it must be non-substantive, that is, without the particular content of accumulated knowledge and experience. If so, then here is an argument for the form-content distinction being a valid distinction. Would you agree?

TEACHER: That seems to make sense, at the moment, anyway.

II.

ME: If this distinction is valid, do you see the educational implications?

TEACHER: I'm afraid not. They do not occur to me.

ME: Would it not be important for us in education to be very concerned about the 'form' of understanding, about the formal aspect of understanding?

TEACHER: Maybe so, but this still sounds very abstract to me. What, in practical terms, can we do about such a problem, if it <u>is</u> really a problem?

ME: What do you mean by that?

TEACHER: Well, we don't know anything about how this 'form' of understanding is developed. From what you have said we don't really know much about it at all apart from the inference that it must exist. What do we do, teach form? Maybe it is impossible, or maybe we teach it without knowing it.

ME: Yes, I know, you are asking for practical relevance.

TEACHER: Of course, I'm a teacher.

ME: Well, I think something can be said on the basis of the philosophical foundation I have provided which will be seen to have practical relevance.

TEACHER: Please go on. I am interested.

ME: Consider again Hirst's 'forms of knowledge' theory. Do you find this to be a sensible and logical point of view?

TEACHER: Well, I am not exactly certain I understand it.

ME: Consider that you, as well as most other teachers, are most likely teaching on the basis of it.

TEACHER: I do not follow you.

ME: Well, you primarily teach content, don't you? That is, you teach subjects.

TEACHER: Yes.

ME: And you teach subjects with the assumption that this is predominantly what is involved in developing the minds of students.

TEACHER: Yes.

ME: Then you are teaching according to a Hirstian philosophy.

TEACHER: And what's wrong with that?

ME: Well of course, things could be a lot worse, but what I mean is, what about our form-content distinction?

TEACHER: Yes, of course. You are suggesting that in teaching subjects we merely teach content and therefore do not adequately address the development of mind, which would require that we also address the other aspect of understanding, the 'form' of understanding.

ME: Yes, that's closer to what I mean.

TEACHER: But this still does not tell me what to do. What if someone were to ask, "How do we teach and develop the 'form' of understanding?"

ME: Let us not move too quickly. We need to consider Hirst a bit further. Do you remember in Chapter V where I discussed the problem of different forms of knowledge manifesting different sorts of logic? It is Hirst's contention that this is the case. Do you find this to be sensible?

TEACHER: Again, I do not know how to answer. I suppose it might be right. He is persuasive, but I don't feel I can judge. It seems out of my depth.

ME: Does it seem sensible to conclude that history has its own logic and that science has another? What then does the term 'logic' refer to?

Is deduction one sort of thing in mathematics and another thing in science?

TEACHER: No, it sounds fairly unreasonable, especially if we can use the same word 'deduction' for both, and I now remember your discussion in that chapter.

ME: It seems to me that philosophies such as Hirst's fail to address adequately questions like "What is presupposed in being able to differentiate disciplines?" "What holds their fundamental principles together and at the same time makes one group (of statements) distinct from another?" When mind is discerned strictly in terms of the assimilation of bodies of knowledge such questions fail to be addressed. Without our form-content distinction such questions cannot be properly addressed.

TEACHER: Yes, I see what you mean.

ME: I have tried to develop the point of view in this thesis that 'forms' of understanding emerge as a logical foundation across the spectrum of different domains of knowledge, and that this is the proper account of logical relations between concepts and groups of concepts. Now, concerning your question of practical relevance,....

TEACHER: Not so fast. I have been curious about one thing. You sometimes refer to 'form' of understanding, and sometimes to 'forms' of understanding. Which is it?

ME: I was hoping you wouldn't ask that question.

TEACHER: Ah yes, too bad. Explain this to me.

ME: I have made no claims to have provided a direct ontological description of a 'form' or 'forms' of understanding. So far, my words have been inadequate in describing what I am after. I merely wanted to

try to show that such a thing is an important aspect of thought, and therefore very important for educators to be aware of. Because of this, any description of "forms of understanding" themselves can be misleading. I used 'forms' because there may be more than one, and I use 'form' because I am, in this thesis, primarily interested in the logical 'form'. It could be the case that any name implying a quantitative description, as if 'forms' could be counted in the manner in which Hirst's forms of knowledge are counted, would be misleading; it would be to assume too much. So I leave it open, for the time being, as to 'form' or 'forms'.

TEACHER: I see.

ME: Let us save these thoughts for a bit later. You wanted to discuss the practical implications. Shall we proceed with that?

TEACHER: Fine.

ME: If we can agree that the 'form' of understanding as such is not defined in terms of separate bodies of knowledge, what does that tell us about teaching?

TEACHER: I'm not sure I follow.

ME: Well, we had agreed that just teaching subjects is not adequate for the development of mind, and therefore not adequate in any proper account of what it is to 'educate'.

TEACHER: So, do you mean we need to teach the 'form' of subjects as well?

ME: Well, perhaps, but that does not get us anywhere; it does not say anything about an actual approach in terms of curriculum.

TEACHER: Oh, do you mean something like integrating subjects, curriculum

integration?

ME: That's one possibility I had in mind.

TEACHER: But remember, this is easier said than done. When you say curriculum integration, what type do you mean?

ME: Of course, I do not mean that we should dissolve all boundaries between subjects. This would be entirely impractical, and in fact, irrational. However, it seems to me that if our argument so far is valid, certain types of proposals would follow rather than others, and we could make these proposals on logical grounds.

TEACHER: Such as?

ME: Curriculum integration, for one thing, must be viewed as a serious alternative, especially in light of our argument <u>against</u> the notion that different disciplines manifest separate and distinct forms of logic. It seems to me that we should be interested in searching out common ground among various disciplines, similar concepts, and highly general, common ideas, connecting principles, and so on. An example might be the integrated Social Studies curriculum.

TEACHER: Yes, this was going to be my point. Are we not doing this already?

ME: To a certain extent. I would, however, like to see deeper studies in this area, particularly studies concerning the <u>most important</u> reasons for such an approach. I would be particularly interested in connections between more diverse areas, for example, "Are there logical similarities between mathematics and art?" or, "between art and ethics?" Could we not teach science from an historical point of view, that is, from the point of view of the periodic <u>changes</u> in knowledge, rather than only

from the point of view of what we see to be "state of the art" now? Imagine what effect this would have in giving real meaning to the question "What is knowledge?"

TEACHER: This sounds as if you want to bring a university curriculum into high schools.

ME: I think that is a bit extreme; much of the point would be left tacit. I mean, for example, I am not suggesting the exploring of Kuhn's paradigm-shift theory. However, I do think there are certain subject areas which could be applicable in high school at an introductory level which are not now being utilized. But this is not all I had in mind. Let me develop another point which you may find more interesting. It also seems to follow that we should consider a philosophical mode of inquiry as an aspect of teaching various subjects.

TEACHER: What do you mean?

ME: I mean that in the teaching of say, science, history, mathematics, art, some time could be devoted to the asking of philosophical questions about the nature of such disciplines.

TEACHER: This is a typical answer of a philosophy student. You want to justify your own pursuits by suggesting this form of inquiry as a solution to educational problems.

ME: We should not be too hasty. The claims I am making I think can be reasonably made on logical grounds.

TEACHER: How so?

ME: Let's re-examine our thinking on the 'form' of understanding. I have argued for such a 'form' being a logical foundation distinct from separate domains of knowledge. In fact, such a 'form' seems to provide

an answer to questions concerning how we are able to integrate and distinguish bodies of knowledge in the first place.

TEACHER: Yes.

ME: It seems reasonable that as educators, we will want to be concerned about this 'form' of understanding, since, like the facts, subjects, or specific theories, it is part of the very meaning of what we understand and know.

TEACHER: So it seems.

ME: And we already established that, as far as achieving this end is concerned, teaching from the point of view of remembering and utilizing specific content alone is inadequate.

TEACHER: Yes. I can see that approach as being a bit trivial now--in fact, somewhat distorting of the grasp of the content?

ME: Yes. Now, what mode of inquiry do we want to emphasize as valuable in stimulating a more conscious awareness of the 'form' of understanding? Would we want to concern ourselves only with particular details and knowledge which are idiosyncratic to each separate discipline, this being the sort of "information processing" mode that we were critical of, or would we want to emphasize contact with more general and abstract ideas?

TEACHER: The latter, I suppose.

ME: And if we are concerned with logical similarities and connections <u>between</u> various disciplines, when do you think students will most readily discover such similarities and connections--when they deal with particulars only or when they "grapple" with the larger, general ideas and concepts?

TEACHER: Again, the latter seems the more reasonable choice since otherwise particulars are more likely to be specific at any time to given disciplines.

ME: Yes. And what mode of inquiry is general enough to be suited to address the foundations of any and every specific type of knowledge and inquiry?

TEACHER: Do you mean philosophy? It also occurs to me that this may be a way of stressing the importance of the nature and function of philosophy in relation to other disciplines.

ME: Yes. So, I advocate a philosophical mode of inquiry, at an appropriate level of complexity, in addition to regular subject-specific content teaching for a number of reasons. First, students very much need to be exercised in dealing with the more general concepts and ideas, ideas which have greater potential for engaging the neglected aspects of understanding. What I mean is, when we teach history, we could also take time to ask what it means to make statements about the past and claim they are reasonable and true, and when we teach mathematics we could take the time to ask not just <u>whether</u> 2 + 2 = 4, but <u>why</u>? This mode of inquiry has the potential to bring into question the assumed certainty of facts, information, theories, and so on, and this, it seems to me, is precisely the point in developing the 'form' of understanding. We want to confront students with the interplay between what is known and the "unknown." This is an important part of what creates and sustains interest. My contention is that when students are confronted with this interplay they will be forced to adopt new perspectives and develop new strategies and skills for dealing with the complexity and

ambiguity that they are faced with. This is, properly speaking, part of what learning a subject entails, and, it seems to me, is what understanding a subject really means. We surely do not want students to accept bodies of knowledge without question.

TEACHER: No, of course, we do not.

ME: Furthermore, through this process we would want students to learn to take more responsibility for the extent of their own knowledge. They will thus deal in a more insightful and independent way with any particular knowledge-claim they encounter.

TEACHER: I am not sure I agree with the reasons you have given, but I'm beginning to see what you mean about practical implications.

ME: Also, remember that what I suggest as a philosophical mode of inquiry <u>is part of</u> curriculum integration properly understood. It is, so to speak, one means towards the educational end.

TEACHER: I don't follow this connection you are making.

ME: I say this because the concept of curriculum integration as I would advocate it must be understood from the point of view of consequences for the learner. In other words, we would want to see a "deepened and broadened" understanding on the part of the learner.

TEACHER: Yes. I have heard these terms, 'depth' and 'breadth', used quite often. What do <u>you</u> mean by this?

ME: By a "deepened and broadened" understanding on the part of the learner I refer to the <u>extent</u> of conceptual connection. That is, we would be inclined to admit that students who understood not only connections confined within a subject, but also logical relations among fundamental concepts between subjects, had acquired what we might call

understanding in depth and breadth. It would be very much like saying that one had come to understand not only one's subject, but also relations to other subjects.

TEACHER: Alright, but I still don't quite follow your point connecting philosophic inquiry and curriculum integration.

ME: Thus far in our talk on curriculum integration we have emphasized acquaintance with general and abstract ideas as a means for discovering logical connections and similarities among disciplines. Curriculum integration cannot be merely a matter of putting subjects together temporally and spatially, but not conceptually. The point is, a philosophical mode of inquiry is one method by which we facilitate the conceptual integration of subjects, since it is, after all, the mode of inquiry which seems to be best suited for dealing with universally general and abstract ideas.

TEACHER: Yes, that nicely puts into words my vague notion that integration is important somehow.

ME: The notion of a 'form' of understanding, it seems to me, also points to another conclusion.

TEACHER: What is that?

ME: If the argument as I have developed it is sound, then a case can also be made against the notion that mathematics, say, is valuable in developing one aspect of understanding, and art for developing another.

TEACHER: I don't see what you mean. The notion looks pretty sound to me.

ME: Well, a predominant assumption in education has been that mathematics is going to do something for us that music, say, cannot. Mathematics is valuable in developing intellectual skills and music is valuable in

educating the emotions, but not vice versa, or something of this sort.

TEACHER: Yes? So what's wrong with that?

ME: Is this not another example of exclusively content-oriented education? Is it not one example of thinking which is based on the assumption that what goes on in one subject is in every way fundamentally different from what goes on in another? This, it seems to me, is to confuse the 'form' of understanding with its content.

TEACHER: But is it not the case that what goes on in mathematics <u>is</u> in fact quite different from what goes on in music?

ME: Yes, considering the present state of education I would have to agree with you.

TEACHER: What then are you suggesting?

ME: If we are to take this notion seriously, it would mean that before the relative merits of music, say, are compared with mathematics in terms of what they contribute to cognitive development, it will require that music be treated, true to its actual nature, not only as an art but also as an intellectual discipline.

TEACHER: I'm not sure I understand what you mean.

ME: Let me try to give a general example. Essentially, the canons of musical harmony are logical in nature. Even atonal music involving tone-rows and serial writing follows procedures which might loosely be called "more mathematical" than musical. The rules of counterpoint are similar cases. Now, this is certainly not <u>all</u> that is involved in music harmony or counterpoint, but it is in fact one aspect of them. The point is that art, in this case music, is accompanied by complex bodies of knowledge. We have already argued against the notion that

different forms of knowledge manifest distinct forms of logic. Thus, students would need to become acquainted more thoroughly with the body or bodies of knowledge associated with the art. That is, students would need to become acquainted with the logical relations fundamental to the theoretical aspects of the art. In this way, in conjunction with its creative potential, art would be allowed to make its valuable cognitive contribution.

TEACHER: I see.

ME: This sort of thing is not now being done. Yet, only on this basis can we fairly judge the educational merits of one subject or the other. I have used music only as an example. If the case can be made for music the chances increase that a similar case could also be made for other arts, and further, that a case could be made for emphasizing the art, the beauty, in mathematics and science, as essential to pursuing them seriously.

TEACHER: Well, what you have said implies fairly drastic changes. Is that part of what you mean by "practical relevance"?

ME: Yes. It occurs to me that the implications of this theory are quite far-reaching and, from some points of view, imply radical changes in approach to curriculum development and its use as educational.

TEACHER: Alright, but wait. Let's go back to a previous point. I understand more clearly what you have been trying to say, but I am not totally convinced you have actually managed to prove anything. For instance, what about this business of there being more than one 'form' of understanding? Do you not subject yourself to the same sort of criticism that Hirst is open to? Perhaps there are seven or eight 'forms'

of understanding, or perhaps twelve or fourteen?

ME: Yes, I realize this is a problem, but I think that overall, the reasons I have given in argument make such a possibility logically implausible, and this, it seems to me, is a good enough starting point for a re-examination of the entire issue. You must also remember that what you have read is not intended to be a final conclusion to inquiry but more a position from which to continue one. There is much more we can and probably should know about these problems.

TEACHER: Yes, I agree. I can see that clearly, now.

ME: Do you now feel that the philosophical foundation I have tried to provide has practical relevance for education?

TEACHER: Well, in a certain sense I do. In one sense my understanding is more informed and yet in another, I am still confused. There are so many points of ambiguity. This worries me, since we must be very careful about what and how we teach. Why are there so many ambiguities?

ME: I know how you feel. One of the reasons is that educational practice is more of an "art" than an exact science. As such, the "essence" of it is very much immediate inspiration in the doing of it, and not so much a set method. And it is always educational practice towards which other educational endeavors ought to be directed. Your concern about practical relevance should also be the concern of philosophers of education. But, you see, you are the lucky one.

TEACHER: What do you mean?

ME: You, as a practicing teacher, are in the position to actually explore more interesting and effective ways to awaken intelligence and develop the understanding of individual learners. It is the interaction between

you and the developing student, your understanding and skill, and the growing understanding of the individual learner that ultimately matters. All our aims need to be manifested in this actual growth of understanding. If not, any claim we make concerning aims in education seems to count for very little beyond intellectual amusement.

TEACHER: That's only comforting and exciting in one respect.

ME: In what way isn't it?

TEACHER: I suspect, in fact I am sure, that what you have suggested, if fully enacted, would constitute not just a few changes here and there, but a revolution in the general approach to teaching.

ME: That worries you?

TEACHER: What worries me is the graves that accompany a revolution.

FOOTNOTES

Introduction

[1]The discussion is not quite as straightforward as is made out here. For details see Bertrand Russell, An Inquiry into Meaning and Truth (London: Allen & Unwin, Pelican Books, 1962), pp. 266-69.

Chapter I

[1]Donald Davidson, Inquiries into Truth and Interpretation (Oxford: Clarendon Press, 1984), p. 184.

[2]Ibid., p. 198.

[3]See Anthony O'Hear, Education, Society and Human Nature (London: Routledge & Kegan Paul, 1981), pp. 79-80.

[4]I accept Quine's definition of extension such that "The class of all entities of which a general term is true is called the extension of the term." (Italics his.) See W.V. Quine, "Two Dogmas of Empiricism," in Philosophy in the Twentieth Century, eds. Henry D. Aiken and William Barrett, 4 vols. (New York: Random House, 1962), 3:103.

[5]Davidson, Truth and Interpretation, p. 184.

[6]Ibid.

[7]Ibid., p. 185.

[8]Ibid.

[9]See A.N. Whitehead, Modes of Thought (New York: The Free Press, 1968), pp. 34-35. Following is my interpretation of the logical point made by Whitehead.

[10]See I. Murdoch, A.C. Lloyd, and G. Ryle, "Symposium: Thinking and Language," Proceedings of the Aristotelian Society 25, supplement (1951): 65-82.

[11]Ibid., pp. 25-34.

[12]Ibid., p. 29.

[13]P.H. Hirst, Knowledge and the Curriculum (London: Routledge & Kegan Paul, 1974) p. 41.

[14]Ibid., p. 40. For a more complete description of these relations see pp. 23-26, and 38-43.

Chapter II

[1]Immanuel Kant, Prolegomena to Any Future Metaphysics, with an Introduction by Peter G. Lucas (Manchester: University Press, 1953) pp. 18-21.

[2]See the chapter entitled "The A Priori" in A.J. Ayer, Language, Truth and Logic (New York: Dover Publications, Inc., 1952) pp. 71-87.

[3]See Quine, "Two Dogmas," pp. 102-21.

[4]Ibid.

[5]Ibid., p. 104.

[6]Ibid.

[7]For more detailed comments on these problems see the chapters entitled "There is at least one a priori truth," and "Convention: A Theme in Philosophy," in Hilary Putnam, Realism and Reason (Cambridge: Cambridge University Press, 1983) pp. 98-114, and 170-83.

[8]Quine, "Two Dogmas," pp. 102-21.

[9]For details of the discussion by Grice and Strawson see H.P. Grice and P.F. Strawson, "In Defense of a Dogma," Philosophical Review 65 (1956): 145-47.

[10]For the general explanation given by Quine, see Quine, "Two Dogmas," pp. 118-21.

[11]This sort of hypothetical example is referred to and criticized by Putnam. The line of thought presented here is also influenced by Putnam's ideas. For details of his argument see the chapter entitled "There is at least one a priori truth," in Putnam, Realism and Reason, pp. 98-114.

[12]See comments by Ayer, Language, Truth and Logic, pp. 77-79. Also included is a summary of Kant's definitions of analytic and synthetic.

[13]See discussions by A.C. Lloyd, in "Symposium: Thinking and Language," especially pp. 44-57. I regard this point of view as misconstruing the logic implied in traditional definitions.

Chapter III

[1]Numerous instances of this description are given by Peters. See, for example, R.S. Peters, J. Woods, and W.H. Dray, "Aims of Education--A Conceptual Inquiry," in The Philosophy of Education, ed. R.S. Peters (Oxford: Oxford University Press, 1973), pp. 15-16.

[2]For a good description of this and other counter-examples and Peters' answer to them see R.S. Peters, "Education and the educated man," in A Critique of Current Educational Aims, eds. R.F. Dearden, P.H. Hirst, and R.S. Peters (London: Routledge & Kegan Paul, 1972), pp. 1-7.

[3]Certain objections have been raised by critics against the value condition as being necessary for use of the term 'education'. This particular objection, that is, talk of poor or bad education seems to be for Peters an acceptable state of affairs. For a closer look at these objections see Ibid., pp. 4-5.

[4]Peters, Woods, and Dray, "Aims of Education," p. 17.

[5]Ibid., p. 16.

[6]Ibid., p. 19.

[7]For the details of this proof see R.S. Peters, "The Justification of Education," in The Philosophy of Education, ed. R.S. Peters (Oxford: Oxford University Press, 1973), pp. 239-67. See especially pp. 251-55. Although there are other epistemological implications and somewhat separate problems for the development of curriculum, it is interesting to note that P.H. Hirst's justification of rational knowledge is worked out in quite similar fashion. For the details of this discussion see the chapter entitled "Liberal Education and the Nature of Knowledge" in Hirst, pp. 38-43.

[8]Peters, Woods, and Dray, "Aims of Education," p. 55.

Chapter IV

[1]It should be pointed out that the case of geometrical shapes may not be quite the same as sensual qualities such as 'red'.

[2]A similar problem is elaborated by D.W. Hamlyn in Experience and the Growth of Understanding (London: Routledge & Kegan Paul, 1978). See especially chapters six and seven.

[3]See J.M. Moravcsik, "Understanding," dialectica 33 (1979):201-16.

[4]This last statement tends to be misleading. What is meant is simply that no judgment concerning understanding will be intelligible apart from the statements which express the judgment and by which the judgment can be evaluated.

[5]It must be noted that I am not concerned here with any sort of temporal priority. This, it seems to me, is a developmental question, and is one perhaps better left to psychologists. In the context of this discussion we are concerned more with logical presupposition and necessary conditions.

[6]This, of course, does not exclude the possibility of showing an entire theory to be false by showing one statement to be false. However, notice that even in this case, such a judgment would assume an integrated view of some sort.

Chapter V

[1]Hirst, Knowledge and the Curriculum, p. 5.

[2]Ibid., p. 25.

[3]Ibid., p. 41.

[4]Ibid., p. 20.

[5]For a complete description see Ibid., pp. 122-24.

[6]In all fairness to Hirst, he does, in passing, acknowledge this problem by suggesting that where grammar reveals elements of logical order, these must equally be respected.

[7]See Gilbert Ryle, "Teaching and Training," in The Concept of Education, ed. R.S. Peters (London: Routledge & Kegan Paul, 1967), pp. 105-19.

[8]I am assuming that this is what Ryle means, although it is not perfectly clear. For a complete look at this point of view see Ibid.

[9]See Jacob Needleman, The Heart of Philosophy (New York: Alfred A. Knopf, Inc., Bantam Books, 1982). What is being said here is influenced in part by Needleman's point of view. To get a thorough look at Needleman's line of thought see chapter eight, "Eros and Ego," and especially the "Conclusion" which contains a summary of his entire position.

[10]Ryle, "Teaching and Training," p. 116.

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